

The Canadian Medical Association Journal

VOL. I.

JUNE, 1911

No. 6

THE PRESENT STATUS OF CONSERVATIVE GYNÆCOLOGY

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IT is undoubtedly a fact that the present tendencies in the treatment of diseases of the internal genital organs of women are markedly towards conservatism, and the time has passed when a woman with a backache, or a persistent pain in her groin, is hurried to the operating table and subjected to the removal of organs which are of the utmost importance not only to herself but to the race, without an attempt being made to save her from such a loss and mutilation by the employment of the local and constitutional measures that are at our command.

One of the first to sound a note of warning against the indiscriminate removal of important organs from a woman's pelvis was Dr. William M. Polk, of New York, who, in an able paper in 1886, said: "In the interest of conservatism, let us hope that this will not always mean extirpation of the tubes and ovaries, for who can say that the abdominal surgeon may not devise means by which those organs may be so treated as to secure health without robbing of the possibility of maternity. The operator who fails to note the distinction between acute and chronic salpingitis, and loses sight of the fact that the first, and even the second, may be cured by simple methods, sacrifices many tubes and ovaries which might better be left in place, a mutilation to be avoided unless imperatively demanded in the interest of the life and health of the sufferer."

I am of the opinion that gynæcological conservatism should, in the first place, imply the avoidance of operative interference whenever it is possible, and that, when surgical intervention becomes imperative, the preservation of an organ, or a portion of one, which may be free from disease and able to functionate, and whose integrity is so important to the woman, should be looked upon as the height of gynæcologic skill. One does not need to be very old to remember the time, only a com-

paratively few years ago, after it had been demonstrated that the peritoneal cavity, which hitherto had been considered inviolate, could be entered with comparative safety, if only ordinary methods of cleanliness were observed, when a woman with a persistent, or even an occasional, pain located in her pelvis, rarely, if ever, escaped the loss of some of her internal genital organs, unless she herself had the temerity flatly to refuse operative interference. All of us have seen women, whom we honestly believed required operation, get well and also bear children after they had been advised and even urged to submit to the removal of the offending organs as the only relief from some serious and extensive pelvic disease.

Little was known at that time of the serious results to the woman of the sudden induction of the menopause, and many good and useful organs were sacrificed to the superstition that disease of one set of adnexæ necessarily meant its extension to the other. As a result of this indiscriminate removal of these organs, in which the effects upon the patients were far from gratifying, the conclusions were forced upon us that the surgically produced menopause had a much more disastrous psychic effect upon a woman than the physiological one, and that certain conditions, which we once considered incurable disease of the adnexæ, were, in many instances, no disease at all, or, at most, were acute conditions which by rest and appropriate treatment would subside and leave the organs in a normal state.

A woman's internal sexual organs and menstrual function are so intimately associated with her psychical and physical balance that any operation which induces her climacteric suddenly, interferes so seriously with those functions which are necessary to her well-being at large, as to produce the most profound mental and physical disturbances. It is therefore imperative that both ovaries should never be removed from a patient who has not passed the menopause, unless they are so diseased that their retention, either whole or in part, would jeopardize the woman's life or complete recovery.

The theory is generally accepted that the ovary is an organ analogous to the thyroid, thymus, pineal, and suprarenal glands, and that, in addition to its function of ovulation, it possesses an internal secretion the absorption of which is necessary to the animal economy during the procreative period. We all know that the function of menstruation should be preserved, especially in a young woman, even if it is unaccompanied by the possibility of conception, and we also know that the removal of both ovaries often produces symptoms which cannot be attributed wholly to a suddenly induced menopause, and which must be due to the lack in the woman's economy of some important

factor. The administration of ovarian extract to women who have had both ovaries removed, and who suffer from these psychical phenomena, sometimes overcomes the reflex symptoms. Surgeons are now attempting to implant pieces of freshly removed, normal, ovarian tissue within the peritoneal cavities of women who have been deprived of their own ovaries, in order to mitigate the psychical disturbances which follow the loss of these organs. The operation is in its incipency and the results are too uncertain as yet to allow an opinion to be formed as to its efficacy, but the mere fact that surgeons of to-day are doing their utmost to replace organs that were formerly removed so readily, goes far to indicate the conservative tendency of gynecology. These unpleasant psychical phenomena pass off in time, but they can be avoided entirely by the retention of an ovary, or a part of one, in suitable cases. The value of the ovaries and tubes to the woman's economy is so great that they should never be removed for purely technical reasons, but a portion of a tube or ovary, especially the latter, which is sufficiently healthy to perform its functions, should be preserved even at the cost of the continuance of some of the minor symptoms from which she has suffered.

Before resorting to any operative interference in these cases the conservative gynecologist should have exhausted all the non-surgical means at his disposal for the relief of such conditions, and should have devoted a sufficient length of time to the trial of these methods of treatment, and not until then should the question of operation be seriously considered. The treatment usually indicated consists in the avoidance of cold and exposure to dampness, especially during menstruation; rest, both mental and physical, more or less complete; ice bag or heat to the hypogastrium; hot, vaginal, antiseptic douches; counter-irritation to the vaginal vault; vaginal tamponing with wool or gauze soaked in boroglycerid and ichthyol, with the patient in the knee-chest position; intra-uterine applications of a twenty-five per cent. solution of protargol; the use of pessaries, where indicated, and, in obstinate cases, a prophylactic uterine dilatation and curettage. Everything possible should be done to enable a patient with diseased adnexæ to avoid the necessity for an operation even though treatment may be prolonged; but when an operation becomes imperative, then that operation should be sufficiently thorough to insure the patient, as far as we are able, a future of comparative comfort with a fair degree of certainty that a subsequent operation will not become necessary to complete what might have been done at the first.

Conservatism in gynecological surgery is even of greater importance than conservatism in the general and local treatment of these cases.

The objects of treatment, whether conservative or operative, should be, primarily, to restore to the patient all her functions without pain or discomfort, but should this be impossible, then we should endeavour to preserve her functions of ovulation and menstruation, and to restore her organs to such a condition that pregnancy may be possible. If the disease has been so extensive that all of these results may not be obtained, the woman should be insured at least the function of ovulation and the internal ovarian secretion. If the disease of the adnexæ has been so extensive and of such a character as to have destroyed all the ovarian tissue, so that to leave any of it would jeopardize the patient's chances of recovery, or render her liable to the necessity for a subsequent operation, then, and only then, should both adnexæ be removed. In a doubtful case a surgeon should never be handicapped by the sentimental wishes of the patient, and be compelled to leave organs which he knows will give future trouble and perhaps necessitate another operation. His reputation is never increased by such a case, even though he has fully warned the patient and her friends of the possible outcome of such an incomplete operation.

A radical gynaecological operation is usually comparatively easy, —the removal of both tube and ovary requires but little thought and a moderate amount of surgical skill; but to decide quickly, during an operation, upon a conservative measure that aims to retain the function and usefulness of an important organ, and at the same time to execute it successfully and produce a symptomatic cure, requires a deeper knowledge of pathology, a greater degree of surgical skill, and a closer insight into end results than is needed by those who would rather remove than save an organ.

Perhaps the diseased condition of the adnexæ that comes to our attention most frequently is an acute inflammation of the tube, or acute salpingitis, due to the introduction of some infection, usually gonorrhœal, by way of the vagina and uterus. I do not think that any of us would now advocate the removal of such a tube as long as the inflammation is acute and limited to the tube itself, but how many thousands of such tubes with their accompanying, and perhaps uninvolvement, ovaries have been sacrificed in past years because they were inflamed, enlarged, and tender, and how many other normal adnexæ have been removed during such operations because the operator thought they too might become affected at some future time?

It is now commonly observed that these tubes, given a little rest, vaginal tamponing, and other local and constitutional measures, supplemented, perhaps, in obstinate cases by uterine dilatation, curettage, and drainage, will return absolutely to the normal in a comparatively

short time, and there are few women who would not give up months of their time to such treatment, with a fair prospect of recovery, rather than submit to a coeliotomy, with its attendant dangers, for the removal of the inflamed organ. There are cases of tubal infection where the fimbriated end becomes closed by adhesive inflammation, and as the tube fills up the pressure becomes sufficient to overcome the obstruction at the uterine end, and a free discharge of pus through the uterus takes place. After such a discharge all symptoms subside for a time, and the patients continue in fairly good health until the phenomenon recurs. Much can be done in these cases of periodic pyosalpinx, between the attacks, by uterine dilatation, curettage, and free drainage, or even by the employment of intrauterine applications of antiseptic or bactericidal solutions.

Undoubtedly many cases of gonorrhœal salpingitis get well, not only symptomatically, but functionally, and such cases should not undergo salpingectomy until one is positive that recovery is impossible, and after every non-operative plan of treatment has been exhausted for their relief. When, however, the abscess in the tube has produced enough distention to cause its rupture, forming a pelvic abscess, the sooner such a collection of pus is evacuated, preferably if possible, per vaginam, the better for the patient. It is frequently necessary to remove the diseased tube by a subsequent operation after the patient has thoroughly recovered from the first. Whether this secondary operation is done by the vaginal or suprapubic route, depends upon the operator's preference. Personally, I employ abdominal section for these cases, for I find it more satisfactory in dealing with the adhesions, and, although the patient's convalescence is not quite so rapid, the results as a whole I consider much more satisfactory. It is really remarkable in how many of these cases of pelvic abscess, which have been freely drained per vaginam, the tubes return to their normal condition, and absorption of the peri-uterine and peri-ovarian adhesions takes place. I have, on a number of occasions, opened the abdomens of women who have had such pelvic abscesses, and have been surprised at how little permanent damage had been done by a very extensive inflammatory process, and how quickly and thoroughly the adhesions had been absorbed. Of course this only takes place where the drainage has been sufficiently free to get rid of all the infective material. At other times one is also surprised at the many severe and distressing symptoms which may result from a few apparently unimportant pelvic adhesions.

In hydrosalpinx and hæmatosalpinx, where the distension has not been sufficient to destroy its integrity, the tube may be slit at its distal

extremity, and after evacuating the contents and thoroughly washing out, the mucous and serous surfaces may be stitched together with fine catgut. Then, after relieving all adhesions, the tube may be returned to the pelvic cavity with the expectation that the tissues causing the stricture at the uterine end will be absorbed and the tube become patulous again. If, however, the tube has been too greatly distended, its chances of recovery are practically nil, and I always remove it, of course leaving the ovary or whatever part of it may be normal.

After a tube has been thoroughly infected with a pyogenic bacillus, and the uterine and fimbriated extremities closed by adhesive inflammation forming a pyosalpinx or abscess of the Fallopian tube, it is doubtful whether by emptying and draining such a tube it ever becomes patulous again and resumes its functions as an oviduct. When the disease has been of long standing the tubal contents may be sterile, but when we realize how eroded and hypertrophied the walls of an old pyosalpinx become, due to hyperplasia from infiltration of pathogenic germs, it does not seem reasonable to me to expect them to return to normal, and if they do not become normal and patulous, what is the use of leaving them within the pelvic cavity, where at any time they may become the source of future inflammatory processes that in all probability will require subsequent operative interference? I should, therefore, question the advisability of the ultra-conservative operative procedure which is being done quite extensively of late, where the pus tube is exposed through a vaginal or even a suprapubic section, all adhesions broken up, and then the tube opened thoroughly, washed out, and drained either by gauze or tubing through the cul de sac. Tubes treated this way may close up, but I cannot imagine that an old pus tube, perhaps of years standing, will, as is claimed by the advocates of this operation, return to its normal size and patency, and absorption of all surrounding adhesions take place. Of course, where both tubes are involved in such disease, and the patient insists that one tube at least be left to give her whatever remote chance there might be of a future conception, I would treat it in this way after explaining to her fully what I considered the danger of such a procedure and allowing her to assume the full responsibility.

An early stage of tubal infection is treated by some operators by stripping the tube of its purulent contents, washing out its cavity with a 1-5000 solution of bichloride, and then dropping it back into the pelvis. I have never followed this plan, for it seems to me about as justifiable as opening an infected and strictured appendix, evacuating its contents, washing it out with an antiseptic solution, and then returning it to the peritoneal cavity, and how many surgeons would advocate

that procedure? We all know the care necessary to disinfect one's hands or the patient's skin before laparotomy, and who would think of contenting himself with simply washing his hands in a 1-5000 solution of bichloride and going into the peritoneal cavity without any further precautions against infection?

I frankly admit that I am afraid of free pus in the peritoneal cavity, and I may be behind the times in refusing to close one in which pus has been spilled, no matter how thoroughly it has been removed. I feel much safer after such an operation if I know that I have a good drain reaching to the infected site, and I believe that such drainage, from the patient's standpoint, is far preferable to running the chance of a secondary opening of the abdomen for infection.

Where the distal end of the tube is the site of a small, circumscribed collection of pus or serum, and the uterine end is fairly normal, the diseased portion should be removed, cutting diagonally through the healthy portion of the tube, and stitching the serous and mucous coats together with fine catgut. Tubes whose fimbriated extremities have been sealed by some preëxisting disease that has subsided, may be opened by slitting up the lumen and uniting the mucous and serous surfaces with fine catgut.

When the ovaries and tubes are found imbedded in a mass of old adhesions, indicating that an inflammatory process has existed at some previous period, due to an infection extending from the uterus through the tubes, the original disease having run its course, it is sometimes found that these adhesions do not necessarily signify any existing disease in the organs themselves, and the pain and other symptoms experienced by the patients are due to mal-nutrition or congestion caused by interference in the circulation by the adhesions. Freeing the tubes and ovaries from these adhesions, and restoring them to their normal position and circulation, will frequently have the effect of relieving the distressing symptoms, and perhaps give the patients a chance of future pregnancy.

I am not in favour of the breaking up of tubal and ovarian adhesions by manual effort, without incision and with the patient anæsthetized. I practised this method to some extent until I carefully separated a small pus tube and ruptured it. This caused me to modify my ideas upon the subject, and now I want to see and feel the adherent tubes I am operating upon. In freeing the adnexæ from such adhesions, care must be taken to free them entirely from every band constricting or binding them in any way, the operator bearing in mind the fact that a single kink in a tube, or a single band constricting an ovary, may interfere with the result of what might otherwise be a very successful

operation. After freeing an ovary from such a mass of adhesions it is sometimes necessary, in order to prevent its future prolapse, to stitch it to the posterior aspect of the broad ligament, and, if the uterus still has a tendency to retro-displacement, to restore it to its normal position by a suitable operation. Personally I am disposed, where feasible, to do an intra-abdominal shortening of the round ligaments by a method of my own, an account of which will be published shortly. Ventral suspension and fixation have never appealed to me as an operative procedure, for I fail to appreciate the advantages of the formation of a strong band of adhesions in front of the uterus, aside from the dangers of an intra-abdominal hernia.

In an endeavour to elevate a prolapsed and adherent ovary, it has been suggested, after relieving all adhesions, to pass it through a slit in the upper part of the broad ligament and attach it to the anterior aspect of that structure. This method does not appeal to me, for in the process of repair I should expect the slit in the broad ligament to close up and exert more or less constriction upon the blood and nerve supply of the transplanted ovary, causing hyperæmia and consequent discomfort and weight.

When the ovary is the seat of large unilocular or multilocular cysts, in the walls of which all ovarian tissue is apparently lost, it is of course necessary to remove the entire growth, especially if the patient has a good ovary on the opposite side. If, however, the other ovary has been removed, it is advisable to strip off some of the cyst wall adjacent to its attachment to the broad ligament in the hope of retaining some of the ovarian tissue, removing all the cyst lining. When the cysts are small, whether single or multiple, with some portion of the ovarian tissue intact and in fairly good condition, it is always advisable to remove the growth either by excision or by incising the cysts, removing their lining membranes, and suturing the rents in the ovarian tissue with fine catgut. It is always advisable to leave a portion of ovarian tissue, however small, if it is free from disease, even if the patient has a good ovary on the other side, for it is impossible to say that this good ovary will remain normal all her life.

In removing a diseased tube, the entire tube should be excised, making a wedged shaped incision into the uterine cornu in order to get all the tubal tissue. When the ovary, or a portion of it, has been left, Boldt advises stitching it into the slit in the uterine cornu made by the removal of the tube, claiming that the patient's chances of future pregnancy are increased thereby. When a Fallopian tube has been removed, using a running suture, the uterus loses a portion of its support, and it is well to shorten the broad ligament by stitching the ovary to the

uterine cornu. This procedure not only puts the ovary out of the way of pressure and future adhesions, but restores to the uterus the support of the broad ligament.

In operating upon an ectopic gestation, the involved tube should be removed, especially if the patient has normal organs on the other side, for a tube in which pregnancy has once occurred is very likely to have a recurrence.

Cirrhotic ovaries are frequently due to the mal-nutrition incident to misplacement of the organs and adhesions binding them down and cutting off their blood supply. When such is the cause, the release of these adhesions and the elevation of the ovary to its normal position will usually relieve the patient of her symptoms. If, however, the cirrhotic ovary is perfectly free, then it should be removed.

Unless an ovarian abscess is so small that it can be excised without rupture, leaving some normal ovarian tissue that can be saved, the entire, suppurating ovary should be removed, together with its tube.

There is no room for doubt as to the advisability of extirpating the affected organ in such diseases as fibroid, fibrocystic, dermoid, malignant, hydatid, and tuberculous degeneration of the ovary, and in these cases the tube on the affected side should be removed also. Malignant disease of the ovary, of course, demands the removal of the affected organ and its tube, but if the ovary on the opposite side is normal it should be left.

I have frequently found women with prolapsed adnexæ, who suffered an amount of pain and discomfort entirely out of proportion to the apparent abnormal condition found on examination, who, upon abdominal section, presented a varicose enlargement of the veins of the pampiniform plexus in the broad ligament. This condition is due to the interference in the circulation of the uterus and its appendages caused by the prolapse, or other displacement, of the organs, and the amount of benefit obtained from any operative measure undertaken for the relief of the condition will depend largely upon the restoration of circulation. It is my practice in these cases, even though I do not remove the appendages on that side, to pass two ligatures through the broad ligament, so as to obliterate most of the veins of the plexus. Of course, where the appendage is removed, the plexus will be obliterated.

Not all uterine myomata require an operation for their removal, but only those which by reason of their size, peculiar position, or the unpleasant symptoms which they produce, render the patient's existence unendurable. In many cases the administration of such internal remedies as stipticin, thyroid extract, and ergot, produce marked beneficial

results, and is particularly advisable in cases approaching menopause, or in those in which for some reason an operation is contraindicated. The most effectual conservative treatment applied to these cases is the removal of the tumours themselves, by enucleation either per vaginam or through an abdominal incision. Some years ago it was thought that only those tumours which were pedunculated could be removed successfully. Later, subserous and even intra-muscular tumours were enucleated, there being practically no limit to the number of tumours that could be removed successfully by this method. At the present time, gynaecologists do not hesitate to enter the uterine cavity and remove these growths while operating through an abdominal incision.

In the selection of cases of uterine myomata suitable for removal by enucleation, it should always be remembered that a uterus once the seat of a fibroid generation is likely to continue to develop these growths even after the removal of all tumours that can be felt. In a case of multiple fibroids there may be many foci of fibroid degeneration so small that they cannot possibly be appreciated except microscopically, and, of course, cannot be removed during an operation, and if these foci continue to grow, the patient may have to undergo a subsequent operation for the removal of the myomatous uterus.

Enucleation of multiple fibroids, and taking the risk of their recurrence, is justifiable where the patient is young, and where the ability to conceive is an important factor. Beyond the age of forty, the complete removal of the uterus, of course leaving one or both ovaries, is the better operation. In removing the uterus for multiple fibroids it is well to bear in mind the fact that small fibroid foci may exist in the cervical tissue without being large enough to be felt. The enucleation of the cervix is advisable in these cases to avoid the risk of the growth of a fibroid in the cervix which has been left.

In order to prevent the sagging and prolapse of the vagina and pelvic floor after the removal of the uterus, the severed ends of the round and broad ligaments should be brought together and stitched to the upper end of the vagina, and the ovaries should be disposed of in such a manner that they will not be caught in adhesions nor pressed upon after the pelvic contents have readjusted themselves.

Vaccine and serum therapy have been used during the past few years in cases of gonorrhoeal endometritis and salpingitis with varying success, but at the present time the whole subject of the treatment of gonorrhoea and its complications in women, by vaccines and serums, may be considered as still in the early experimental stage. The reports concerning their use in pelvic inflammatory disease are too scanty to justify conclusions as to their efficacy in these diseases.

I have purposely avoided discussing the treatment of gynaecological conditions by electricity, because the subject is too broad to be embodied in a paper of this size, and I have had very little personal experience in its use. The conclusions I have reached in the treatment of gynaecological cases are:

1. Treat the case expectantly as long as there is the slightest chance of recovery without operation.
2. When operation is imperative save all the organs or parts of organs possible.
3. A conservative operation is not necessarily an incomplete operation. Remove all the organs, or parts of organs, that are so diseased that to save them would necessarily expose the patient to the dangers of a second operation.
4. Except in extreme cases, or in those near or past the menopause, save the patient her function of ovulation, or, at least, leave her some part of her ovarian tissue to avoid the psychical disturbances which follow the total ablation of these organs.

ROYAL COLLEGE OF PHYSICIANS OF LONDON. The Weber-Parkes Prize and Medals (prize of 150 guineas and two silver medals).—The competition is open to members of the medical profession in all countries. The next award will be made in 1912, and the adjudicators have selected as the subject of the essay for that occasion, "The Influence of Mixed and Secondary Infections upon Pulmonary Tuberculosis in Man, and the Measures (preventive and curative) for dealing with them." The essay must be based on original work and observations (experimental or other) of the author, and must include a detailed exposition of the methods employed and their mode of application. All essays, together with any preparations made in illustration of them, must be transmitted to the Registrar of the College during the last week of May, 1912, in accordance with the regulations relating thereto, copies of which will be forwarded from the college on application. The award will be made on some day previous to October 18th in that year.—J. A. Ormerod, M.D., Registrar. Pall Mall East, London, S.W., Eng.

TREATMENT OF TYPHOID FEVER BY VACCINES

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IN dealing with typhoid fever our most important duty lies in its prevention. Besides the hygienic measures, which should be enforced by the state, the method of prevention by vaccination has assumed, during the past decade, an important place in the prophylaxis of this disease. It was first used by Wright in 1896 on a few cases, and was then employed in India on four thousand cases with encouraging results. On the outbreak of the Boer war in 1898 it was extensively used on the troops leaving for the front. The results and records of these cases were unfortunately much confused, so much so, in fact, that the method was abandoned. Leischmann, however, continued its use among the European soldiers in India with brilliant results. The incidence per thousand was reduced from 28.3 per cent. to 3.8 per cent., and the mortality per thousand from 4 per cent. to 0.37 per cent. In fact the incidence and mortality were ten times greater in the unvaccinated than in the vaccinated troops. It is astonishing to note that the incidence in the vaccinated cases is less than the mortality in the unvaccinated. In the German South African army similar encouraging results have been obtained. Thus from an experience of some thirteen thousand vaccinated cases and sixteen thousand controls the prophylactic value of typhoid vaccination has been established.

Richardson has taken advantage of this protective inoculation to prevent the so-called hospital typhoid fever amongst the nurses and doctors and other hospital attendants in the Massachusetts General Hospital. In former years it was found that from two to six nurses had annually contracted typhoid fever within the hospital. In order to prevent this all the hospital personnel were submitted to anti-typhoid inoculation. Since then no cases of typhoid fever have developed amongst the attendants. It seems probable, therefore, that this will become a routine applicable to all new candidates in the training school

and also to the staff of resident physicians. The inoculations were generally three in number, at intervals of about five days. The dose began with one hundred million and increased successively up to three hundred million. Local and general reactions were seldom severe. We think a greater and more permanent degree of immunity could be produced if the second and third doses were seven hundred and fifty million and fifteen hundred million, respectively, without incurring a local or general reaction severe enough to incapacitate the individual.

The treatment of typhoid fever by bacterial vaccines has been used as yet in a very limited number of cases. In fact there are at the present time only one hundred and twenty-seven cases reported in the literature. The results obtained by the various workers are somewhat at variance, some reporting good results, others slight improvement, and one no effect whatever. On combining all of these cases into one series definite results are apparent. The course of the disease was materially shortened and the character was much milder after the vaccination. This occurred very frequently, and even though some of the cases were very toxic and had high temperatures before the vaccination, the result was a relief of the toxic symptoms and a shortening of the course of the disease. This was not universally true, but the number of cases treated was not always sufficient to allow any definite conclusion to be drawn. On the average, however, the disease was shortened by ten days, and the stay in the hospital by twenty days. In regard to the mortality and the occurrence of relapses, both were diminished as follows:

Deaths amongst treated cases.....	4.6 per cent.
Deaths amongst untreated cases.....	12.2 "
Relapses amongst treated cases.....	2.3 "
Relapses amongst untreated cases.....	13.0 "

It is quite apparent from these statistics that the mortality and the relapses were markedly reduced, and that the cases ran a shorter and milder course.

The dosage of vaccine in all the cases reported up-to-date has varied between twenty-five and one hundred millions. This dose is small and does not produce a very marked reaction; in consequence the benefit is not as great as when a larger dose is given. No particular mention is made in any of the reports of the occurrence of local reactions which we have come to look upon as of prognostic value. It may be said that the greater the local reaction after the first injection the greater the resistance of the patient. This is quite in accord with the theory of anaphylaxis, and is borne out by other methods of vaccination such as tuberculin.

Through the kindness of Dr. Martin we have had the opportunity during the past year of treating certain cases of typhoid fever with vaccines. In order that we should not be biased in the choice of cases, we took those under the charge of one of us for vaccination, and used the other cases entering the hospital during the same months as controls. This was done because the severity of the typhoid fever has varied greatly during the past year, and on account of unavoidable circumstances the vaccination has not been carried out continuously. The general treatment of both vaccinated and unvaccinated cases was the same as far as could be carried out. The diagnosis in all but one case was made by the Widal reaction or a positive blood culture. On this account the vaccination was unfortunately often delayed many days after the entrance of the patient into the hospital. As will be seen later, much valuable time was lost in many cases before the vaccine treatment was begun.

There were forty-one cases vaccinated, and we took the temperature curve, the general improvement of the patient, the occurrence of relapses and complications, and the rate of mortality as indications by which we judged the benefit of the treatment. The vaccines were prepared from organisms isolated from the blood of typhoid fever patients. Auto-genous vaccines were not used, although this would be a marked improvement and could be done if the cases were received early enough and vaccination became a routine in the treatment of typhoid fever. Further reference will be made to this later. Six or seven cultures from different cases were inoculated on plain agar-agar slants and incubated for twenty-four hours. The growth was then removed in sterile, physiological salt solution containing 0.4 per cent. of carbolic acid. This suspension was allowed to stand for twenty-four hours, when it was always found to be sterile. The number of the organisms as then estimated, according to the method devised by Wright, and the suspension diluted with salt solution containing 0.2 per cent. of carbolic acid, so that 1 c.c. contained ten hundred million typhoid bacilli. The suspension was then put into small glass capsules, each of which contained 1 c.c. and these were kept in stock ready for use. The vaccine was not sterilized by heat, as by this means its efficacy seems to be impaired.

The initial dose was usually 1 c.c., or ten hundred million typhoid bacilli. This is greatly in excess of the doses used by other workers, but in no case did any ill result follow the use of this amount. In every case a large erythematous patch developed around the point of inoculation, accompanied by pain and tenderness of a slight degree. In one case only was there a chill. These symptoms began to subside after twenty-four hours, and entirely disappeared after forty-eight hours.

The second dose was usually fifteen hundred million, and the third dose was either the same or two thousand million. After the second and third inoculations little or no local reaction occurred. In no case was there an exacerbation of the typhoidal symptoms, but in twenty-four hours a distinct improvement was manifested, either in the general condition of the patient or the chart, and frequently in both.

On analyzing these cases, according to the points that we have taken, as indicating the benefit of vaccination, we shall first deal with the temperature chart. From the general standpoint, the number of days of fever is first to be considered. The average length of fever in the uninoculated was thirty-seven days, while in the inoculated it was twenty-eight days, or a diminution of nine days. As stated above, many of the cases did not reach the hospital until late in the disease, as on the 25th, 28th, 30th, and 95th day, respectively, while in other cases the inoculation was delayed on account of the absence of a positive Widal reaction. It is hardly fair, therefore, to judge the value of the vaccination as to its influence on the duration of the fever by these gross figures. However, if we analyse the cases vaccinated within the first two weeks, we find the average time of fever to be twenty days, or a shortening of the course of the disease by two weeks. It may be stated that the earlier the first inoculation is given the sooner the temperature becomes normal, and the fewer the doses required. This is demonstrated by the fact that of seventeen cases vaccinated during the first two weeks only three required a second inoculation, and the average duration of the disease in those cases receiving one dose was only seventeen days.

A much more striking influence of the action of the vaccine is apparent when an estimate is made of the number of days of temperature after the vaccination was begun. Twenty-six cases received one dose, and the temperature returned to normal on an average of five days later. This in many charts is very striking, and in some the temperature dropped almost by crisis. Eleven cases received two inoculations, and the average length of time of fever after the first injection was twelve days, while after the second injection it was four. The average interval between the inoculations was eight days. In the cases which received two injections, it was a constant observation that there was a marked improvement in the condition of the patient after the first inoculation, while the second dose seemed to produce a crisis in fifty per cent. of the cases. There were several that were very instructive in this respect. One was very toxic, delirious, and had a high temperature. On the eighteenth day of the disease the first injection was given, and within forty-eight hours the temperature was 100°, and the toxic symptoms had disappeared. The temperature continued with a maximum of 100°

until the thirtieth day, when a second injection was given. Within forty-eight hours the temperature was normal and the patient made a rapid recovery. The diagnosis in this case was not conclusive, although the Widal reaction was very suggestive. Yet, in the light of the marked and rapid improvement after the administration of the vaccine, a diagnosis of typhoid fever was made.

There were four cases receiving more than two injections: three received three, and one, four. The cases receiving the three doses all entered the hospital during the fourth week of disease, and were in a very bad condition. One of them had had an abortion, and a pelvic abscess developed, which later ruptured into the peritoneal cavity, causing a perforation of the bowel and general peritonitis. This case died on the fifty-first day of disease. The other two were very much emaciated, and plainly showed the effects of a very virulent infection. On vaccination, however, prompt improvement was manifested in their general condition, although the temperature slowly returned to normal. The case in which four inoculations were given was the only relapse that we had in this series, and it was on account of this that the four doses were necessary.

The beneficial influence of the vaccines on the toxic symptoms was almost constant. In some cases the toxæmia diminished out of proportion to the drop in temperature, but in the majority these two conditions were more or less parallel. It may be stated at this time that in no case did any increase in the toxic symptoms appear after the administration of the vaccine.

On analyzing these cases as to the occurrence of complications, most striking results are obtained. In the unvaccinated cases, complications of a severe character, namely, hæmorrhage, perforation, cholecystitis, otitis media, periostitis, and phlebitis, developed in 42 per cent., while in the vaccinated cases complications occurred in only 5 per cent. This was one case that had a perforation of the bowel six days after the vaccination. Relapse occurred in 13 per cent. of the untreated, and in 2.4 per cent. of the treated, while the mortality was 10 per cent. in the unvaccinated, and 2.4 per cent. in the vaccinated. It will be seen by this that there were twice as many deaths amongst the untreated as there were complications amongst the treated cases. It has been a constant finding in all series of cases that have been treated by vaccination that the complications, relapses, and mortality have been markedly diminished. The results obtained in these cases also show the advantage of the use of vaccines in the treatment of the sequelæ of typhoid fever due to the typhoid bacillus, as periostitis, osteitis, cholecystitis, pyelitis, etc.

From the findings in these cases it is apparent that the earlier the vaccination can be started the better the results. Therefore, the first inoculation should be given as soon as a probable diagnosis of typhoid fever can be made from the clinical findings, without waiting for the appearance of the Widal reaction or the presence of a positive blood culture.

There is another form of infection by the typhoid bacillus which has been very resistant to all forms of treatment; namely, the typhoid carriers. These cases may have either a chronic infection of the genito-urinary tract or of the gall-bladder, and for years may excrete virulent typhoid bacilli, although they are apparently immune and continue in good health. It would seem, at first thought, that these cases would not respond to the treatment by vaccines on account of the immunity already established. But, why should they not respond to vaccines the same as cases infected by the bacillus coli? As a matter of fact, they do, and this is the only treatment that has been successful in these cases. There have been four cases reported in the literature, three of which have been cured, and one greatly improved. One of us has had the opportunity of treating two such cases, which are here reported for the first time. One was a chronic bacilluria. The bacilli present gave all the reactions of the typhoid bacillus, and were agglutinated by the patient's serum. There was a history of typhoid fever twelve years previously, and since that time the urine had been cloudy. Numerous physicians had examined him, and had all diagnosed a bacillus coli pyelitis of unknown origin, but none had made a thorough bacteriological examination. The patient was put on vaccine treatment, using an homologous vaccine. The first dose was five hundred million, and the inoculations were repeated every seven days, with progressively larger doses, until two thousand million bacilli were given at each inoculation. After six months' treatment the urine was perfectly clear, and the patient voided sterile urine during the following year, when he passed from observation. The second case was one of chronic, suppurative cholecystitis, with gall-stones. The patient had had typhoid fever eight years previously. During this time there had been repeated attacks of moderately acute cholecystitis or gall-stone colic, but most likely the former, as the attacks dated from shortly after the typhoid fever. The patient was at last operated on. An empyema of the gall-bladder, with one large stone, was found. The gall-bladder was drained, but did not give any evidence of healing after six weeks. A culture of the discharge showed a pure growth of bacillus typhosus. A vaccine was prepared from this culture, and the patient inoculated as before. After the third inoculation the sinus was completely healed,

and the patient has remained in good health without any symptoms of a recurrence. Repeated examinations of the stools in this case, after vaccination was begun, did not show any typhoid bacilli, so it may be presumed that the cystic duct was obliterated, and the patient was not a source of danger to the public health. The first case, however, must have been a continual source of danger, although after careful investigation no definite epidemics could be traced to him.

We should like at this time to call attention to a public duty that is being more or less ignored by many of the large hospitals in cities where typhoid fever is endemic. Without doubt a certain small percentage of typhoid fever patients become typhoid carriers. Therefore, it must be our duty to use every means in our power to detect such cases. The only place where this is possible is in our hospitals, where proper facilities are at hand to carry out such bacteriological work. Such work is perfectly practicable, as we have had the opportunity of establishing such a routine, and in this manner an occasional typhoid carrier has been discovered and properly treated before the infection had become too deeply engrafted and the public health had been menaced.

CONCLUSIONS:

1. The prophylactic use of vaccines is of great value in diminishing the incidence and mortality of typhoid fever.
2. The treatment of typhoid fever by vaccines shortens the course and diminishes the severity of the disease.
3. This treatment has also a very beneficial influence on the number of complications, relapses, and deaths in typhoid fever.
4. The only successful treatment of typhoid carriers has, up to the present time, been that of autogenous vaccination.

TYPHOID IN THE WINNIPEG GENERAL HOSPITAL

By S. J. S. PEIRCE, M.D.

Pathologist in the Winnipeg General Hospital

DURING the years 1901-10 seventy-one cases of typhoid fever have developed amongst members of the house staff, nurses, physicians, orderlies, etc., of the Winnipeg General Hospital. The distribution of the cases and certain other facts in relation to them are shown in the following chart:

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	Total	Died	Days in hospital
Nurses.....	2	5	5	4	5	10	5	3	2	7	48	2	2,333
Male help...	..	..	..	3	..	3	1	1	1	1	10	3	408
Maids.....	..	..	..	..	..	2	4	..	1	..	7	1	504
Physicians .	1	..	1	..	..	..	4	..	..	..	6	1	178
	3	5	6	7	5	15	14	4	4	8	71	7	3,523

In none of these cases was there any trace of a house epidemic except in 1907. In that year no less than nine,—three nurses, two maids, and four physicians,—were taken sick with typhoid between the dates, August 18th and August 29th. The cause of this epidemic has never with certainty become known, but it is very likely that it was due to the infection of a single ten gallon can of milk contaminated by flies. It cannot be denied that during the years 1906 and 1907 the source and method of handling the milk supply of the hospital were not above question.

It will be noticed that during the same year there were five other cases. These were distributed irregularly throughout the year and evidently have no relation to this epidemic. The unusually large number of cases in 1906 and 1910 do not show the features of an epidemic. Of these seventy-one cases, seven died, giving a death rate of nearly 10 per cent. This is slightly below the general death rate of typhoid cases treated in the wards during the same time. The low death rate among the nurses, about 4 per cent., is noteworthy.

The expense to the hospital of these cases is measured by the number of days' treatment given them,—3,523 days. This is nearly equivalent to one individual of the staff being off duty with typhoid continuously for the whole ten years. The average number of days' treatment for each case, fifty days, is considerably above that given to other cases

in the general wards, which may be interpreted as meaning that the type of disease occurring among the house staff is more severe than that occurring generally outside the hospital.

The incidence of typhoid among the nursing staff calls for special consideration. Of the seventy-one cases forming the basis of this report, forty-eight were nurses. On an average, therefore, about five members of the nursing staff contracted typhoid each year. This number has not shown any definite sign of diminishing in recent years, as will be seen by reference to the chart above. It bears, too, no apparent relation to the number of cases of typhoid in the hospital wards at the time; e.g., nine nurses took typhoid during the years 1904-05, during which time over twelve hundred were treated in the hospital wards and the same number during 1909-10, when only four hundred and fifty-one cases were treated. It seems to bear some relation to the number of nurses in the training school; e.g., twenty-seven cases occurred in the latter half of the decade as against twenty-one in the first half. These figures are roughly proportionate to the number of nurses in training in the latter half of the decade.

On tabulating the wards on which each nurse was on duty at the time of contracting the disease, certain interesting features are brought out:

On duty on	
Medical side.....	37
Surgical side.....	5
Unknown.....	6
	<hr/>
	48

It is interesting to note that of the five cases recorded from the surgical side, one had returned from her holidays three weeks previously, and so had conceivably contracted it outside the hospital, two were staff nurses included in the epidemic of 1907, and one was of doubtful diagnosis. Nearly 90 per cent., therefore, of all cases were contracted while on duty on the medical side. In this connexion it may be noted that of the ten cases among the male help six were orderlies on the medical side.

Tabulation of the years of training during which the disease was contracted reveals another striking fact:

Years of training:	
First year (including probation).....	30
Second year.....	10
Third year.....	3
Graduates on the staff.....	2
Unknown.....	3
	<hr/>
	48

The two graduates on the staff are those included in the epidemic of 1907, and one of the three in the third year is that of doubtful diagnosis mentioned above. Hence about 90 per cent. of all cases were contracted during the first and second years of training, and of these three times as many were in the first as in the second year.

To repeat, 90 per cent. of all cases of typhoid among the nurses of the Winnipeg General Hospital occurred among those in the first or second years of training, while on duty on the medical side. It is these nurses who are brought into most intimate contact with typhoid cases. Theirs is the duty to sponge the patient, make his bed, and convey the bed-pans and urinals. The source of the infection is therefore pretty obvious. They are in a word nearly all "contact cases."

It will be instructive to compare these statistics with those of other hospitals. Joslin and Overlander (*Boston Medical and Surgical Journal*, September 26th, 1907), found that twenty-five cases of typhoid developed among three hundred and twenty-two nurses working in six hospitals during the years 1902-06. This, they found, gave a typhoid morbidity rate of 161 per 10,000 per annum as against 20 per 10,000 in the whole population of the state of Massachusetts. Spooner (*American Journal of Public Hygiene*, August, 1909), found nineteen cases in ten years among the nursing staff of the Massachusetts General Hospital. Here the nursing staff numbers about 119 in any one year. This gives a morbidity rate of 160 per 10,000 per annum.

The figures for the Winnipeg General Hospital are much in excess of this number, the morbidity rate for the past ten years being about 480 per 10,000 per annum. But it is to be noted that the general typhoid morbidity rate for the population of Winnipeg is in excess of that of Massachusetts, being for the last ten years 60 per 10,000 per annum. In a word the nurse in the hospital, where typhoid is being treated, is about eight times more liable to take the disease than other individuals in the same community. It may be calculated from what has been shown above that the nurse in the first year of training in the Winnipeg General Hospital is at least fifteen times as likely to take the disease as the rest of the population of Winnipeg outside the hospital.

The question of protection that may be given to hospital nurses may be considered under two headings,—general sanitation, and immunization. The fundamental principle underlying all typhoid sanitation is the fact that infection always takes place by way of the mouth. In "contact cases," which form the bulk of those under consideration, infection is by way of typhoid germs transferred to the lips by the patient's own hands, which have been soiled by contact with infected material.

The pupil nurse should be, and doubtless is, instructed never to put anything in the mouth while on duty. This is made extremely difficult to the inexperienced nurse by the well meaning acts of patients and their friends, who, finding that gratuities are refused, ply the nurse with fruit and other delicacies. Proper instruction, too, is given the pupil nurse as to cleansing the hands after coming in contact with typhoid cases, but it is scarcely to be expected that a recruit, bewildered by the multiplicity of details that she has to remember and tired often by the unaccustomed work, will unfailingly carry these instructions into effect. They are of real use only after they have been transmuted into a habit, and this occurs only after she has passed out of the sphere of greatest danger.

A possible, though not a very probable, source of danger suggests itself. It has been shown that sewage flowing quietly in a smooth channel does not give off bacteria to the air, but if flowing in an irregular channel, or disturbed in such a way as to produce bubbles which burst, then under these conditions minute droplets of fluid containing living bacteria may be given off and float about in the surrounding air. In this connexion the noisy flush of the slop-hopper may be a source of danger to the nurse who has emptied imperfectly disinfected typhoid discharges into it.

These considerations emphasize the importance of keeping the inexperienced nurse away from contact with the typhoid case. Whether this may be accomplished by segregating the typhoid cases and transferring the handling of the alvine and urinary discharges of such cases to a few experienced male or female nurses, who have either had typhoid or who have been properly immunized against the disease, is a question for the management of the hospital to consider.

It seems scarcely to be expected, however, that sanitary measures alone will eliminate typhoid from the staff of institutions such as this. Attention has therefore been given of late to methods of immunizing the individual in a manner similar to that which has met with so much success in smallpox. A sufficient amount of work has now been done on the study of anti-typhoid inoculation to place it on a fairly sound basis as a procedure of unquestioned value. In a recent number, January 5th, 1911, of the *Boston Medical and Surgical Journal*, F. F. Russell, M.D., of Washington, D.C., reviews the history of the procedure and details the results to date. After showing that in the American army during the Spanish war 86 per cent. of the total mortality was due to typhoid, and that among the German army in the Franco-Prussian war 60 per cent. of the total mortality was due to the same disease, he details some of the results obtained by anti-typhoid inoculation in the armies of England, Germany, and America.

In the British army it was introduced by Sir A. E. Wright, who in 1898 supplied vaccine, which was used very extensively during the Boer war. Although it was shown that by its means the incidence of the disease among the vaccinated was reduced half, and the mortality two-thirds, these results were not so striking as had been expected, and the procedure therefore fell somewhat into discredit. In 1907 Sir William Leishman, one of Wright's co-workers, revived the procedure and showed that much of the old vaccine was inert on account of over-heating in its preparation. He obtained brilliant results among the British army in India. In February, 1909, Major Russell, after spending some time in Sir William Leishman's laboratory, introduced the procedure into the United States army. Since then up to date, December 1st, 1910, 14,226 persons have been inoculated under his direction with no untoward results. Among these only six cases of typhoid have developed, all of a mild type, with no deaths. This gives a typhoid morbidity rate of 4 per 10,000 as against a rate of 50 per 10,000 among the unvaccinated remainder of the United States army.

Leaving out of consideration the cases vaccinated during the Boer war, which were supposed to number about 100,000, there have been vaccinated since 1904:

In the British army in India.....	60,000 men
In the German army in South West Africa.....	7,000 "
In the United States army.....	14,000 "
	<hr/>
	81,000 "

This total of 81,000 were inoculated with no untoward results. The harmlessness of the procedure is therefore fully established.

In August, 1909, Spooner and Richardson (*American Journal of Public Hygiene*, August, 1909), investigated the occurrence of typhoid fever among the nurses of the Massachusetts General Hospital and found as follows: 1. In the Massachusetts General Hospital the annual incidence of typhoid fever contracted within the institution is high, i.e., an average of between two and three cases yearly. 2. The disease contracted under such conditions seems to run a course of more than ordinary severity. 3. The disease among the hospital personnel is not diminishing in frequency.

As the outcome of this investigation in 1909, under the direction of Dr. M. W. Richardson, secretary of the State Board of Health of Massachusetts, anti-typhoid inoculation was introduced among the nurses of this and nine other institutions. Up to date, four hundred and five have been vaccinated. It is interesting to note that in 1909 and 1910 there have been no cases of typhoid among the nurses of the

Massachusetts General Hospital. Among those vaccinated in the nine other institutions two cases developed. These both seem to have been inoculated during the incubation period of the disease. Both recovered after a mild attack.

During the winter of 1907, in a somewhat extended tour through the laboratories of the United States and eastern Canada, I made careful inquiries as to the experience of the various laboratory workers in this procedure. Nowhere did I find it in use as a prophylactic measure. It will be seen that this was during the period subsequent to Wright's work in the British army, but antecedent to the publication of Leishman's later work and Russell's work in the United States army, and therefore during a period when the procedure was more or less under a cloud. On my return in 1908 I prepared a quantity of anti-typhoid vaccine and, after inoculating myself, I applied the method to various volunteers among the house staff of the hospital. By this means I was enabled to demonstrate the harmlessness of the procedure and, by the discovery of agglutinins in the blood of those vaccinated, to secure some evidence of its value in immunization. As, however, the method seemed to be still in the experimental stage, it did not seem justifiable to advise its introduction generally among the hospital staff. That this was not done seems, in the light of subsequent events, to have been unfortunate, as during 1909 and 1910 no less than twelve cases of typhoid developed among the house staff, with two deaths. The work of Russell, Richardson, and others during the last two years has so unquestionably demonstrated the value of the procedure that it does not seem justifiable to withhold any longer this additional protection from the members of the training school for nurses.

DR. J. FRIEDJUNG, of Vienna, recently tabulated his observations upon one hundred only children—forty-five boys and fifty-five girls. Their ages varied from two to ten years. Eighteen of the hundred suffered from severe nervous disorders, and sixty-nine were slightly neuropathic. That is, of the hundred only children, none of them more than ten years old, eighty-seven were in an abnormal nervous condition. Among a hundred children in families of more than one child, but thirty-seven cases of nervous trouble could be found. The nervous defects in the only children seemed to have reacted unfavourably on their physical condition. An unusually large number were found to be sufferers from poor appetites, indigestion, intestinal troubles, and general malnutrition.

AN UNCLASSIFIED TROPICAL FEVER

BY S. MCGIBBON, M.D., C.M.

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THE purpose of submitting the following notes for publication is to call the attention of physicians experienced in tropical medicine to the existence in Mexico of a fever to which no reference is made in standard medical works.

My attention was first forcibly directed to this disease in the summer of 1904, in the mining district of San Fernando, situated at an elevation of about three hundred and fifty miles above sea-level on the west coast of Mexico. In my private practice in the western part of the state of Durango, and at a later date, while in charge of the Southern Pacific Railroad hospital at Culiacan, I encountered a number of such cases, usually sporadic, coming from several different localities in the low-lying parts of the states of Sonora and Sinaloa bordering on the Pacific. On the occasion referred to above, the outbreak had the character of a widespread, epidemic disease, attacking the natives in rapid succession, until the majority of the residents of the district had been afflicted, when it as suddenly subsided. The disease appears to be at times quite contagious, usually affects adults, and is of very sudden onset, resembling in many respects remittent malaria. Soon after onset the patient is prostrated, and almost invariably takes to bed. The temperature rapidly mounts to 39° or 39.5° or even 40° C., and is accompanied by occasional chills, severe head-and backache, and frequently by pains in the limbs and other parts of the body. It is a non-exanthematous disease, and the fever persists for a very variable period, varying from two to ten days, but usually lasting from four to seven days. It is not infrequently of the reverse type, and falls by a crisis as sudden as the onset. An uneventful convalescence is immediately established, and within two or three days the patient is usually well.

The mortality from the disease is very low and complications of a serious nature are very rare. I have witnessed but one fatal termination in about two hundred cases.

GASTRO-INTESTINAL SYMPTOMS: These are few and variable, consisting of very marked anorexia and occasional vomiting, but I have never observed the black or hæmorrhagic type of vomit. Mild, toxic

diarrhoea is observed at times, and constipation with variable abdominal pains, probably due to intestinal fermentation, is frequently present. In patients suffering from tænia, the evacuation of a large part of the parasite not infrequently takes place, though not so often as in malaria.

NERVOUS SYSTEM: This is usually more seriously affected than is generally the case in malaria. There seems to be a greater tendency to delirium, and the patient suffers more mental anxiety, usually believing himself to be suffering from a very serious illness.

CUTANEOUS SYSTEM: The skin is hot and dry in the morning, moist in the afternoon, and perspiration is usually free before the crisis. Sweat rashes, such as miliaria and sudamen, are seen, and a very few cases of toxic erythema have been observed extending over the anterior thoracic region and, in one case, to the malar regions of the face. No jaundice or yellow sclerotics have been noticed.

RESPIRATORY SYSTEM: This shows very few symptoms or physical signs. A very mild cough, due to slight catarrhal bronchitis, is present in a fair proportion of cases, but in no respect does one observe a resemblance to the catarrhal and bronchial conditions obtaining in the bronchial type of influenza, and the characteristic sputum is therefore absent. Complicating broncho-pneumonia was the cause of death in the only fatal case that has come under my observation.

BLOOD-CIRCULATORY SYSTEM: In the cases examined, nothing of interest was to be noted in this system. The usual ratio between the temperature and pulse rate prevailing in most fevers was observed here. The falling pulse rate accompanying a rising temperature, as in yellow fever, has not been observed. The microscopical examination of the blood did not show the existence of the plasmodium malarie. I have not observed any relapses, and the relation of the disease to the seasons seems to be very distinct, as in no case have I observed a case except in the hot months, usually preceding the rainy season. The treatment I believe to be purely symptomatic, as the disease is a self-limiting infection.

It will be observed that we are here dealing with an unusual type of fever, one the classification of which has been for me a very real difficulty. It is remarkable for its negative features and the absence of definite symptoms or physical signs upon which to base a definite diagnosis. This feature of the disease renders the process of exclusion the most applicable for diagnostic purposes, and an effort will be made below to show why it cannot be satisfactorily classified as belonging to one of the usually accepted classes of fevers.

DIFFERENTIAL DIAGNOSIS

INFLUENZA: It is to this disease that the fever considered bears

the greatest similarity, and for some time, but with little assurance or personal conviction, I so diagnosed it. In its duration, in its remittent or continuous type, and in its occurrence in sporadic and sometimes epidemic form, it closely resembles the febrile type of that disease, but its occurrence invariably in the hot season, instead of the cold or winter season, as is usually the case with influenza, and the almost uniform absence of the severe, bronchial features and characteristic expectoration so frequently seen in the common type of influenza, as well as the very rapid convalescence and prompt restoration to health and work, are in marked contrast to the prolonged weakness and enfeeblement which mark the convalescence of many cases of influenza. Owing to the absence or scantiness of the expectoration, I have never been able to detect the specific organism of influenza, but I do not attach undue importance to this failure.

MALARIA: Although this fever is sometimes difficult to eliminate to a certainty, owing to the difficulty occasionally encountered in finding the plasmodium malarie in the blood during the first few days of the disease, in cases of longer duration, however, it can be quite definitely excluded. In the fever under consideration, the blood examination is always negative in uncomplicated cases. In the malaria encountered in this part of Mexico, the specific action of quinine and its salts is very striking, and the assurance with which results can be awaited after its administration is really remarkable. This prompt and certain action in nearly all cases renders it very valuable as a therapeutic test, but on administering it to patients suffering from the fever under consideration its action is negative.

YELLOW FEVER: This can be excluded by the constant absence of black vomit, jaundice, and albuminuria, and by the low mortality rate, as well as by the absence of the gradual lowering of the pulse rate in the presence of an ascending temperature.

With relapsing fever I have had no experience, but both it and dengue can be definitely excluded by the absence of relapses. The Widal reaction for typhoid is absent. A sporadic case with severe cerebral symptoms, occurring on a hot day, might possibly be mistaken at first for insolation, especially should the patient take ill when at work, but the course of the disease would soon reveal the error. In the presence of an epidemic, the absence of any constant relation between the onset and the hot hours of the day or the exposure of the patient would render such a mistake impossible.

After eight years' experience in this climate, I am definitely convinced that in this disease we are dealing with one of the unclassified fevers. Several observant foreign physicians, with whom the matter

has been discussed, also confess their inability to classify it satisfactorily. The opinions of the native physicians I have found to be of little or no help. As the fever seems to be endemic in this region, and as it is apparently the only one that has not been classified as its very definite symptomatology warrants, the writer believes that its naming and classification would be both timely and a very distinct clinical help to practitioners who are called upon to discuss and treat it.

"It is a well recognized fact that both carbohydrates and fats have a marked sparing power over the catabolism of protein material. In the past these two foodstuffs have been merely regarded as sources for the supply of energy—as mere fuel. Evidence is gradually accumulating which points to the carbohydrates, at least, as playing quite a definite rôle in the anabolism of protein. This power is apparently not shared by fats, or, if they do possess it, they have it in a much lower degree. Further, carbohydrates would seem to play also a very intimate part in the metabolism of fats. Take diabetes mellitus as an example. Here, as the result of the imperfect combustion of fat, the condition of acidosis arises. The degree of acidosis can be markedly lessened if carbohydrate, even in small amount, be added to the diet. Indeed the results obtained by this addition have been so good that several modern workers maintain that it is nothing short of a criminal act to withhold absolutely carbohydrate from a diabetic, more specially as many cases, if care and time be taken to test them (and the test is not very difficult to carry out), can be shown to be tolerant to small amounts of carbohydrate."—*The Glasgow Medical Journal*.

OBLITERATION OF THORACIC CAVITIES

(EXPERIMENTAL)

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SINCE our communication last year* on the subject of experimental thoracic surgery, we have continued the work on a more extended scale. The observations and results here recorded deal exclusively with the anatomical changes in the thoracic structures, both mural and visceral, following the artificial production of intrathoracic cavities.

As we were able to demonstrate in our experiments upon rabbits, a closed pneumothorax following the extirpation of one lung led, in all cases where the animal survived the immediate effects of the operation, to the formation of an extensive pleural effusion, which not only filled the eviscerated cavity but encroached upon the uninjured lung through pressure of the exudate upon the mediastinum (Fig. 7). We further showed that this effusion did not occur if, after the thorax had been closed, sufficient air were aspirated from the cavity to induce a negative pressure equal to or greater than the average intrapulmonic tension on the uninjured side (Figs. 8 and 9).

The occurrence of pleuritic effusions in dogs following the amputation of one lung and closure of the thorax without the relief of the pneumothorax, led Meyer to the conclusion that such operations could yield successful results only if carried out in a negative pressure chamber. Flint later, however, recorded several successful unilateral pneumonec-tomies in dogs in which the pneumothorax was partially overcome by placing a canula in one angle of the thoracotomy wound, and withdrawing it during expiration as the last suture was tied.

In our experiments upon dogs in which only one lobe was removed, we found that hyperpressure sufficient to produce overdistension of the remaining lobe, and displacement of the mediastinum towards the cavity from overdistension of the opposite lung, was effective in creating the

**Montreal Medical Journal*, June, 1910.

necessary degree of negative tension within the cavity after closure of the thorax. Similarly the employment of a canula in one angle of the thoracotomy wound, and its withdrawal during expiration as the last suture was tied, overcame the untoward effects of a closed pneumothorax. In a majority of our cases, however, intrathoracic cavities following the removal of viscera were aspirated under manometric control, a negative tension equivalent to the pressure of ten millimetres of mercury being employed.

It is quite evident that the negative tension within a cavity resulting from the use of hyperpressure, that following closure during expiration, and the known negative tension of ten millimetres of mercury induced by aspiration, must in each case, or at least under the first condition (hyperpressure), vary widely from the physiological or normal intrathoracic tension; and, conversely, that the normal intrathoracic tension is neither the maximum nor the minimum negative tension which may be effective in promoting the obliteration of a cavity. We would, therefore, conclude from our experimental results that the minimum requisite in such a cavity is a negative tension equal to the average intrapulmonic tension in the normal lung.

Owing to the uniformity of the results obtained, only a small portion of the experimental material will be here presented. The coloured photographs and the skiagrams show the compensatory changes in the anatomical structures forming the boundaries of thoracic cavities, experimentally produced, in which pneumothorax has been overcome by one or other of the methods above described.

As will be seen from the illustrations, the more apparent changes in the structures bounding a cavity are the altered position of the mediastinum, including displacement of the heart, gullet, and trachea; the retraction of that part of the diaphragm abutting upon the cavity; and the compensatory changes in the pulmonary tissue, either in the remaining lobe on the same side of the mediastinum as the cavity, or in the opposite lung. Where the lower lobe, for instance, is removed, the adjacent butterfly and upper lobes play the chief part in the obliteration of the cavity. The compensatory changes in the lung tissue are, however, universal, except where adhesions fix the limit of expansion. That such is the case, is evident from the invariable, and in some cases marked, displacement of the mediastinal septum, such a displacement being impossible without the support of the contents of the unopened pleura. This compensatory distension in the sound lung is found to affect chiefly the costal and diaphragmatic zones, where the infundibula are most numerous and of the largest size, that is, those portions of the sound lung most remote from the cavity. A similar process of rearrangement

in the movable abdominal viscera leads to the support of the retracted diaphragm, the viscera again being maintained in their altered position by the abdominal muscles.

The changes in the thoracic wall overlying a cavity contribute but little towards its obliteration. The negative tension within and the atmospheric pressure without lead to a variable, though always perceptible, degree of flattening, depending upon the size of the cavity, the length of time during which the support of the thoracic viscera is withheld, the presence or absence of intrathoracic adhesions, and the age of the animal. Deformity of the costal wall is invariably associated with lateral curvature in the spinal axis.

As the outcome of this experimental work, a negative tension drainage apparatus for use in thoracic empyæma, which provides not only for the escape of discharges, but also for what would appear to be a physiological requisite in the obliteration of thoracic cavities; namely, the maintenance of negative tension, has been devised by one of us. The application and successful use of this apparatus will be dealt with in a further communication.

DESCRIPTIONS OF ILLUSTRATIONS

I. Coloured photograph of specimen from rabbit, No. 10. Operation, November 10th, 1909: right pneumonectomy. Aspiration of eviscerated cavity. Killed January 5th, 1910. Specimen hardened in formalin. Dorsal view shows complete obliteration of cavity with but slight deformity of bony thorax. The anatomical structures concerned in the obliteration of the cavity are found to be, from behind forward: (1) the diaphragm; (2) the hypertrophied and deflected butterfly lobe; (3) a small nodule of lung tissue surrounding the bronchial stump; (4) in the extreme antero-lateral position the heart and pericardium. The areas between these structures are seen to be occupied by masses of fat tissue. The voluminous base of the left lung is seen to the left of the spine, with a narrow margin of diaphragm beneath. The height of the diaphragm on the two sides should be compared.

II. Coloured photograph of specimen from rabbit, No. 21. Operation, December 3rd, 1909: right pneumonectomy. Aspiration of eviscerated cavity. Found dead December 29th, 1909 (coccidiosis). Heart chambers and vessels injected. Tissues hardened in formalin. Ventral view of thoracic viscera shows complete obliteration of the eviscerated cavity by (1) the diaphragm; (2) the butterfly lobe; (3) the heart and pericardium. The mediastinum is seen to lie in contact with the thoracic parietes. In order to show the hyperdistension of the butterfly lobe, the diaphragm has been largely cut away.

III. Coloured photograph of thorax of dog, No. 45. Ventral view. Operation, April 25th, 1910: excision of upper lobe under positive differential pressure. Simple ligation and cauterization of bronchial stump. Closure of thorax with pericostal stitch, with canula in posterior angle of wound, which was withdrawn during forced expiration. Killed August 31st, 1910. Lungs injected with "Kaiserling No. 1." Specimen shows extensive adhesions between the upper and outer border of the lower lobe and the parietal suture line; also dense adhesions over the diaphragmatic and outer surfaces of this lobe; these adhesions rendering impossible the expansion of the lobe in an upward direction. The right upper lobe is found to extend across the median line and is seen to fill completely the left upper thorax from the first to the fourth rib.

IV. Lateral view of same specimen. Behind the compensating right upper lobe is seen the gullet, which in this part of its course is strongly deflected towards the eviscerated cavity.

V. Coloured photograph of specimen from dog, No. 51. Ventral view. Operation, June 29th, 1910: left thoracotomy through periosteal sheath of sixth rib. Excision of lower lobe under positive differential pressure. Closure of bronchial stump by Meyer's method. Thorax closed during expiration. Killed August 31st, 1910. Lungs injected with "Kaiserling No. 1." Specimen shows marked compensatory dilatation of the left upper lobe, upward retraction of the left leaf of the diaphragm, and deflection of the butterfly lobe towards the eviscerated cavity. Other viscera affected to a less extent by the re-arrangement are the heart, pericardium, right upper lobe, œsophagus, and trachea.

VI. Dorsal view of same specimen shows very beautifully the compensatory over-distension of the left upper lobe, as well as the extraordinary degree of upward retraction of the diaphragm. The deflection of the gullet towards the eviscerated cavity is an index of the capacity for re-arrangement possessed by the mediastinal contents.

VII. Skiagram (dorsal view) of rabbit, No. 14, operated upon November 26th, 1909. Removal of right lung and butterfly lobe. *Cavity not aspirated*. Killed January 7th, 1910. Trachea and bronchial tree injected with Onion's alloy. Skiagram shows: (1) truncate right bronchial stumps; (2) organized exudate occupying position of right lung and butterfly lobe; (3) distortion of left bronchial tree through deflection of the mediastinum from pressure of exudate.

VIII. Skiagram (dorsal view) of rabbit, No. 15, operated upon November 26th, 1909. Right pneumonectomy: butterfly lobe not removed. *Cavity aspirated*. Killed January 10th, 1910. Trachea and bronchial tree injected with Onion's alloy. Skiagram shows: (1) stumps of bronchi to the right lung; (2) injected bronchial branch to the butterfly lobe; (3) absence of exudate in eviscerated cavity; (4) deflection of the trachea and whole bronchial tree towards the cavity. Dissection showed the cavity to be wholly obliterated by a rise in the right leaflet of the diaphragm, compensatory dilatation of the butterfly lobe, and deflection of the mediastinum and its contents supported by compensatory enlargement of the left lung. A similar re-arrangement of the thoracic organs following removal of the right lung is seen in the coloured photograph of specimen from rabbit, No. 21.

IX. Skiagram (dorsal view) of rabbit, No. 25. Operated upon December 21st, 1909. Left pneumonectomy. *Cavity aspirated*. Killed February 24th, 1911. Trachea and bronchial tree injected with bismuth paste. Skiagram shows: (1) stump of left common bronchus; (2) the heart and great vessels occupying the left antero-lateral position; (3) deflection of the bronchial branch to the butterfly lobe from the median to the left lateral position, the left border of the partially collapsed butterfly lobe being faintly visible; (4) the high position of the left leaflet of the diaphragm. Dissection showed the cavity to be wholly obliterated, the mediastinal septum lying in contact with the left wall of the chest.

X. Skiagram (dorsal view) of injected bronchial tree of dog, No. 45, (see coloured photograph), from which the left upper lobe was excised. The right upper bronchial branch is seen to conform in its distribution to the altered position of the compensating lobe. This distribution should be compared with that seen in skiagram of dog, No. 51. One should note also the normal distribution of the bronchial branch to the left lower lobe, which through adhesions was prevented from taking part in the compensatory changes. For the same reason the left diaphragmatic leaflet is retained at its normal level. The lack of detail in this and the following skiagram is owing to the infiltration of the pulmonary tissues with fluid.

XI. Skiagram (dorsal view) of injected bronchial tree of dog, No. 51, (see coloured photograph), from which the left lower lobe was excised. The outstanding feature is the extreme compensatory retraction towards the cavity of the left leaf of the diaphragm.

XII. Micro-photograph of section of lung tissue from left lower lobe of dog, No. 45, showing normal alveoli.

XIII. Micro-photograph of section of lung tissue from right upper lobe of dog, No. 45, showing compensatory dilatation of alveoli.



FIG. I.



FIG. II.



FIG. III.



FIG. IV.



FIG. V.



FIG. VI.

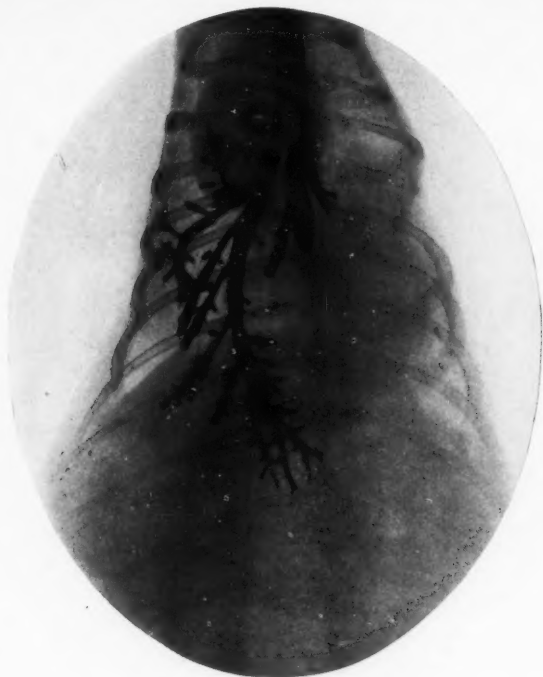


FIG. VII.



FIG. VIII.

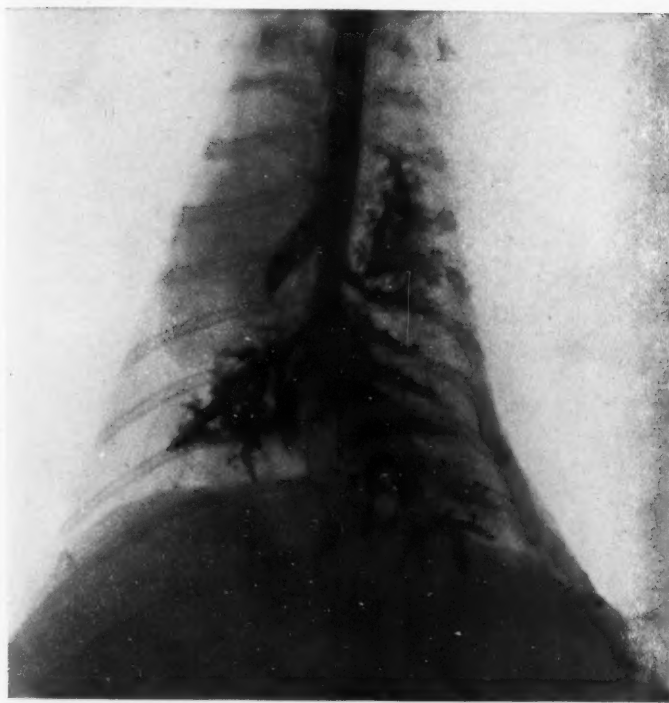


FIG. IX.



FIG. X.

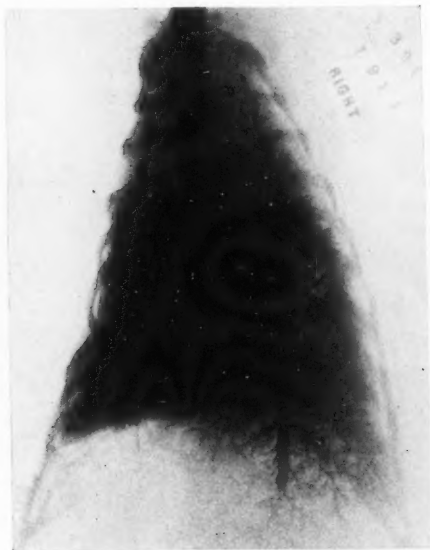


FIG. XI.

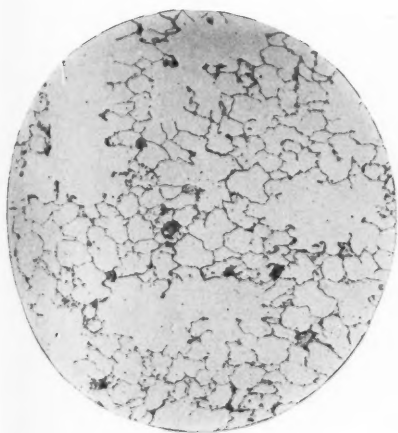


FIG. XII.

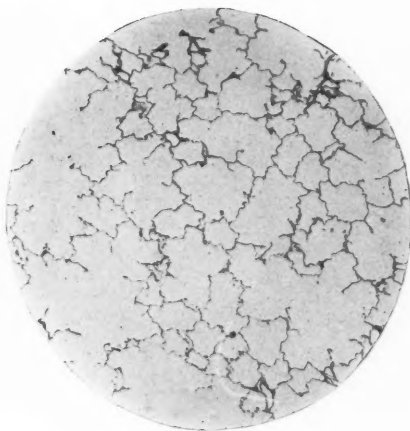


FIG. XIII.

A NEW ANTERIOR URETHROSCOPE

BY WILLIAM HUTCHINSON, M.D.

Clinical Assistant in Surgery, Royal Victoria Hospital, Montreal

UP to the year 1865 the diagnosis of diseases of the bladder and urethra was more or less speculative. The credit of making the first step, and indeed it was a long one, along the line of applying the principle of direct illumination to the urinary passages, belongs to Desormeaux, who, in 1865, brought before the Academy of Paris the first urethroscope, or endoscope, as it was then termed. Upon the principle underlying his original endoscope, all urethroscopes and cystoscopes have been constructed up to the present day. While cystoscopes have diverged very far from the original plan, the anterior urethroscope remains to a great extent the same: we are still using the straight tube, and in some models the source of light is outside the tube, as in the one constructed by Desormeaux.

The instrument of Desormeaux consisted of a straight tube down which light was reflected from an oil lamp. A few years later Bruck substituted a platinum wire made to glow by means of the galvanic current and kept cool by a water-jacket. This method was fairly satisfactory, except that it was impossible to dilate the urethra, and it was very difficult to get any magnification by means of a lens system. The next advance came with the development of the Edison incandescent lamp, which was modified by Mignon in order to make it small enough to be used in the urethroscope. By this invention the lamp could be placed at the bottom of the tube instead of having the light reflected into it. This was a decided advance, for it made possible the application of lenses to magnify the field and a window to dilate the canal with air.

Along these lines numerous instruments have been constructed. At the present day one might divide all urethroscopes into two classes, one being adapted for examination, and the other for treatment.

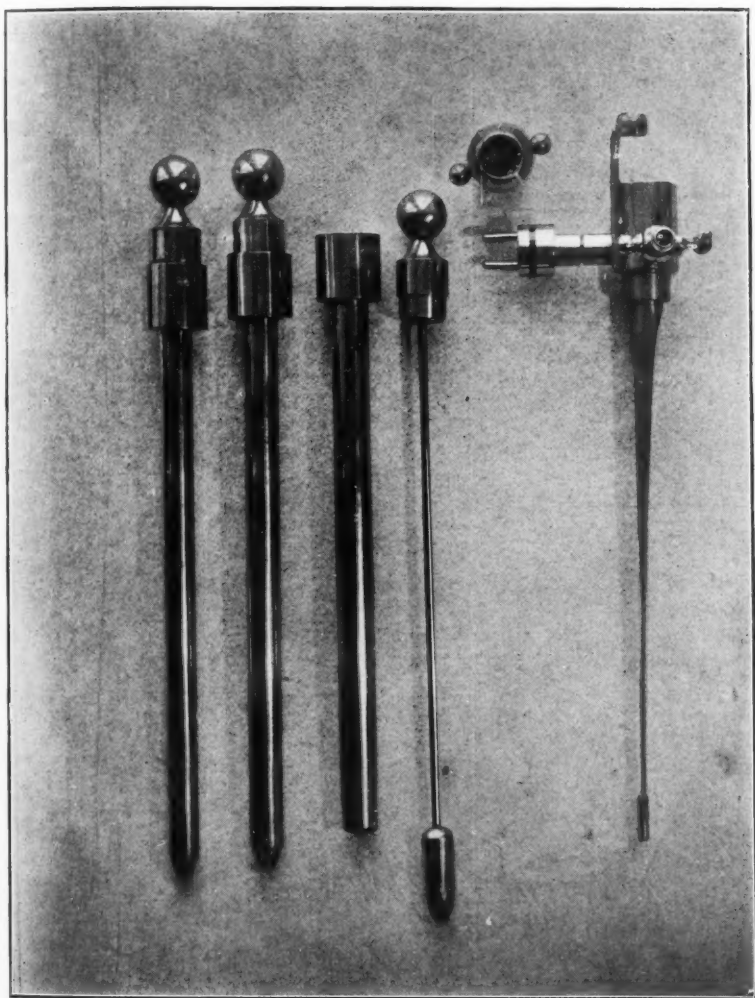
The first consists of a straight tube inserted by means of an obturator and containing a lamp at the lower end. When the obturator is removed, an air-tight window, with a small tube on one side for inflation, is fastened to the outer end, and just sufficient air is pumped in to distend the urethra, thus straightening out the folds and giving a better view of the walls. As an examining instrument it is everything that could be desired, but when one wishes to treat the condition found in the uerthra

the window has to be removed, and consequently the picture becomes altogether a changed one.

The second type of instrument is admirably adapted for treatment, but it is not so good for diagnostic purposes. The most perfect instrument of this type consists of a straight tube inserted with an obturator. When the instrument has been passed as far back as the membranous urethra the obturator is withdrawn and the lamp inserted. Attached to the outer end of the support for the lamp is a small lens so fixed that it stands about an inch and a half above the tube. This lens is so constructed that it does not need to be placed directly in the centre of the field, but will give a good view a little to one side. This arrangement gives plenty of space to do any operative work necessary on the urethra. As previously mentioned this instrument is an excellent one for treatment, but as a means of examining the urethra it suffers under two disadvantages. The first is that the urethra cannot be distended with air. The second is that after the instrument has been partially withdrawn and it becomes necessary to pass it back again, one must remove the lamp and reinsert the obturator.

The instrument which I wish to present combines the two types in one. It is manufactured by the Wappler Electric Company, of New York. It consists of a straight tube, which is inserted by means of an obturator. When it has been passed back to the membranous urethra the obturator is withdrawn, and the lamp is passed down to the bottom of the tube. The lamp is attached to a thick tube one inch in length, and having a universal diameter in order to fit all the tubes of the set. Attached to this is a lens similar to the one on the McCarthy urethroscope. The attachment of this lens is so made that it can be swung in and out of the field. There is also a window, having a lens of the same magnification as the one just described, which fits tightly to the end of the tube so that inflation can be accomplished.

TECHNIQUE: The instrument is first lubricated with any transparent, lubricating material, and then passed, with the obturator in place, down to the membranous urethra. The obturator is then withdrawn and the lamp inserted. The window is next put in place and the urethra gently inflated. Just sufficient air is pumped in to unfold the mucous membrane of the urethra. The instrument is now gently drawn outwards, thus giving a view of the whole lining of the urethra. If it is desired to push it in again, it is not necessary to reinsert the obturator; one needs simply to keep the urethra distended, and thus no injury will be done to the mucous membrane, which is one of the important advantages of this instrument over the other types of instruments. When the lesion to be treated comes into view the window is gently removed, allow-



The Hutchinson Urethroscope

ing the walls to collapse. Everything is then held steady, and the second lens is turned into position. This lens being the same strength as the one in the window, the magnification will be similar. As has been previously mentioned, this lens is so constructed that there is plenty of room to do any operative work beside it.

"It is generally assumed and believed that in man the resistance to tuberculosis increases with age. The young are especially prone to tuberculous infection, only too often of a progressive type running a rapid course. It is usually said that in the very young there exists a physiologic state or 'disposition,' which renders them more susceptible to infection and less resistant than adults. This predisposition is regarded as specially marked in the children of tuberculous parents. Such children are exposed very freely to infection because of the close contact in which they are placed with those about them, and this may explain, in part at any rate, the apparent increased susceptibility. It may be noted that experiments with the young of tuberculous animals do not appear to indicate that there is any special susceptibility to tuberculosis in them. The large percentage of positive tuberculin reactions in children points unmistakably in the direction indicated; namely, the ease with which infection occurs early in life. Indeed, it seems not improbable that, at least in the large cities, almost every person is infected with tuberculosis by the time he reaches puberty. Hence it lies near at hand to conclude that the increasing resistance to tuberculosis as age advances may be largely the result of infection with tubercle bacilli early in life."—*The Journal of the American Medical Association.*

Case Reports

EXOPHTHALMIC GOITRE AND PREGNANCY

ON February 8th last, we were consulted by Mrs. M., aged thirty-two. The symptoms that induced her to consult us were dyspnoea, sleeplessness, and general weakness. Examination revealed that she was about seven months advanced in pregnancy, eyeballs very prominent, pulse about 120, no perceptible enlargement of the thyroid, very restless, and easily excited. Stellwag's and Graefe's signs were both present. The urine was highly albuminous. She was sent to Medicine Hat General Hospital, and put to bed. A meat-free diet, with a very small quantity of salt, was ordered, and bromides and hypnotics were given for the restlessness. She improved considerably under this treatment, although an occasional hypodermic of morphine was needed to secure sleep. She had been married ten years, and had never completed a pregnancy, though she had had one or two miscarriages.

At the time of her admission we were unable to procure any quinine hydrobromate, which we proposed to give her after the method advocated by Forscheimer, i.e., five grains four times daily, with the addition of one grain of ergotin to each dose if improvement is not noticed in forty-eight hours. This, however, we got later and started its administration, but without result, except to upset her stomach. It was therefore discontinued.

On February 25th she suffered from toothache, which caused a wakeful night, and the following evening she developed a slight attack of tonsillitis. Her temperature, which had up to this time been normal, rose to 102°, and her general symptoms became aggravated. About two o'clock on the morning of the twenty-eighth, labour pains began, and she was transferred to the maternity department. Her temperature at 8 a.m. was normal, and her throat trouble was practically well. Labour progressed slowly, and at 11.30 a.m., the os being fully dilated, a little chloroform, less than a dram, was administered, and the child delivered in a few minutes by forceps. There was less than the usual amount of post-partum bleeding. The child was living, and apparently about seven and a half months.

Following the labour, she felt very much better, both physically and mentally, and hoped that her troubles were over. At 6 p.m. the

same day, she had a chill, and her temperature rose to 102.8° , pulse 148, and respirations 50. Severe diarrhoea set in, which continued in spite of treatment, her bowels moving almost continuously. The bowel movements were dark green liquid. At 2 p.m. the following day her temperature reached 104.6° in the axilla. She was exceedingly restless, and delirious, her abdomen became much distended, and she died in coma at 9.30 p.m., March 2nd.

The fatal termination in this case was apparently due to hyperthyroidism. The rapid onset of the symptoms, beginning a few hours after labour, would eliminate the possibility of infection, and the symptoms were not such as would suggest either uræmia or eclampsia.

Any literature to which we have access does not enter very deeply into the matter of exophthalmic goitre complicating pregnancy. Ochsner and Thompson's recent work on the thyroid, mentions that pregnancy is a serious complication of the disease, but does not suggest any special treatment. Edgar, in his "System of Obstetrics," says that pregnancy is also an unfavourable occurrence in a patient afflicted with Graves' disease, and further states that, unless the symptoms are very severe, interruption of the pregnancy is not indicated. In a recent article by Crile of Cleveland on the causes of hyperthyroidism following operation, it is held that the shock and psychic elements are responsible for the symptom complex known as hyperthyroidism. The case above reported would seem to uphold his contention.

There are a few questions suggested by this case: Was the albuminuria, which persisted through the entire course of her trouble, while under our care, caused by the exophthalmic condition, or only a complication? There were no symptoms such as general oedema, headache, impairment of vision, etc., noticed at any time. Finally, and what is of particular interest to us, considering the unfortunate outcome of the case, would the earlier induction of labour have improved her chance for recovery?

Medicine Hat, Alta.

CHAS. F. SMITH,
FRED. W. GERSHAW.

THE LATENT TETANY OF LACTATION

HIS early cases of tetany occurring in nursing women, Trousseau considered that this disease was peculiar to them and designated it "nurses' contractures." It was not until further observation showed him that it had a much wider and more diverse origin than this that he discarded the appellation in favour of the one originated by his pupil Corvisart; namely, tetany. Nevertheless, in spite of the altered nomenclature, he has stated in his well-known Hôtel-Dieu lecture that "nursing is perhaps the most frequent and active cause of intermittent contractions."

Slight advance was made in the study of this disease until Pineles, MacCallum, and others, showed that there is a threefold relationship among tetany, the parathyroid glands, and calcium metabolism, and that in the administration of the salts of calcium we have a rational and effective therapeutic procedure in at least some of the conditions included under the title of tetany. The symptoms of the typical attack I shall mention only briefly here: 1. The peculiar position of the hands, consisting of adduction of the thumbs, flexion at the metacarpal-phalangeal joints, and extension of the phalanges. This is the so-called "obstetric hand," and seems to be dependent upon hyper-irritability of the ulnar nerve. 2. Spastic involvement of other voluntary muscles, plantar flexion of the toes, contraction of the muscles of the face, chest, and abdomen, and even, in some cases, of the larynx and trachea. 3. Increased mechanical and galvanic irritability of the motor nerves. 4. Trousseau's phenomenon. 5. Other occasional symptoms, as diarrhoea, urticaria, severe pain in the contracted parts, mental irritability, fast pulse, and localized sweating.

It is not, however, these severe and unmistakable cases that I wish to discuss, but the cases showing few and slightly marked symptoms, yet which, if left untreated, may later cause considerable distress to the mother and perhaps remote consequences to the child.

The case which drew my attention to the condition occurred in a small, poorly nurtured woman, who had always shown extreme susceptibility to infection. Shortly after the birth of her first baby, she began to show signs of hyperthyroidism—fast pulse (120-140), occasional exophthalmos, tremor, and enlargement of the thyroid. This last, however, she had had since puberty. Disregarding advice she insisted upon nursing her child, and I saw nothing of her until the baby was

about four months old, when she came to me complaining of pain and stiffness in her fingers. This kept up with varying severity for another month, when I was summoned, to find her suffering from a very severe attack of tetany. Calcium lactate was given in large doses by mouth, with the result that the symptoms almost entirely disappeared within thirty-six hours.

The calcium was kept up for some time and the baby weaned. The stiffness in the fingers did not return, and the fast pulse, tremor, and exophthalmos gradually abated. The child was placed upon a mixture of milk, heated almost to boiling, and some malt preparation. It seemed to thrive for about a month upon this, when I was called to find it with purplish, bleeding gums, epistaxis, numerous petechiæ on the buttocks and thighs, and extreme tenderness of the legs. It looked the picture of infantile scurvy, but remembering the mother's condition, I gave it calcium lactate without changing the diet. Recovery took place within two days, and since then on proper diets both child and mother have been quite well.

The second case I saw some little time later. The child, which was three months old, had begun to refuse its mother's milk, though it seemed fairly healthy. The mother, an elderly primipara, weak and anæmic, complained very much of stiffness in the fingers, but after a few doses of calcium and the institution of a calcium-containing diet this entirely disappeared. The child also took to the breast with greater avidity.

The third case I saw a short time ago. I was called to attend a baby, which, shortly after being fed some white of egg for the first time, suddenly developed an elevated, deeply scarlet coloured rash upon the face and extremities. The lesion on the face was sharply outlined and absolutely symmetrical, with a peculiar, triangle shaped area above either eye. There were no constitutional symptoms and the rash soon faded. As I was leaving the house, the mother told me that for several weeks she had suffered from stiffness of the fingers. Several times she had been unable to unloose her hands from things, such as the handle of a jug, which she had grasped, until somebody came to her assistance. After taking calcium these symptoms at once disappeared.

The symptoms presented by the last two cases may not, of course, have been due to the tetany, but the similarity to the first case mentioned, as well as the success of the therapeutic test, points to their being of this nature. The children's ailments are also very interesting, as they both were evidently blood conditions, but whether due at all to their mother's deficiencies in calcium, I am not prepared to say.

In conclusion I would only state, that probably latent tetany is

much more common than is generally believed, that it is especially apt to occur in nursing women, and that in the salts of calcium we have a safe, sure, and convenient remedy.

Toronto.

F. W. ROLPH.

FROM an examination of five thousand specimens, with a comparative study of the pathology and clinical histories in two thousand cases of obliteration, carcinoma, and diverticulum of the appendix, Drs. McCarty and McGrath, of Rochester, Minnesota, in the March issue of *Surgery, Gynecology and Obstetrics*, have arrived at the following conclusions: "The series confirms the percentage of obliteration found in the appendix by other observers; obliteration seems to occur as the result of an inflammatory process as shown by its histology, the time of occurrence, its irregularity of occurrence, the duration of the process, and the higher frequency in appendicitis than at autopsy in general; many appendices become acutely inflamed during the process of obliteration and therefore an obliterated appendix should be removed if possible; carcinoma may occur at practically any age; it was impossible to make the diagnosis of carcinoma from the external appearance in seventy-seven per cent. of the cases of carcinoma; the high frequency of carcinoma in obliterated or partly obliterated appendices may demand removal of all partially or completely obliterated appendices; carcinoma of the appendix occurs in association with changes in the appendix which are related to the process of obliteration; carcinoma of the cæcum probably arises from the appendix only in a very small percentage of cases."

Editorial

THE CANADIAN MEDICAL ASSOCIATION MEETING

THE coming meeting of the Canadian Medical Association in Montreal bids fair to be one of the most largely attended and successful in the history of the Association. Coming as it does immediately after the functions connected with the McGill reunion, there is no doubt that a great many who attend the latter will remain for the Association meeting. The entertainment committee and the committee of arrangements have made special efforts to render the stay of visitors enjoyable.

On the evening of the first day, June 7th, there is to be a smoker in the Victoria Rifles Armoury, and on the afternoon of the third day, a visit, by special train, to the Macdonald Agricultural College at Ste. Annes. One new feature, which it is hoped will prove particularly acceptable to the members of the Association, is the lunch offered to the Association by the Montreal members on Wednesday and Thursday in the new medical building, in which all the section meetings are to be held. It is anticipated that this will mean a great saving in time, and will serve to bring the members back punctually to the afternoon sessions, which begin at two o'clock. In the way of amusements, it may be mentioned that all the golf links around Montreal will be open to the Association members and the ladies who accompany them.

The provisional programme shows a very satisfactory list of papers, many of them of more than ordinary interest, while among the names of those who have been invited to address the Association are several which are very widely known. Sir James Barr, of Liverpool, is to give the address

in medicine on Thursday evening in the Royal Victoria College, his subject being, "Preventive Medicine, the Medicine of the Future." Dr. Wm. J. Mayo, of Rochester, Min., is to give a paper on "Cholelithiasis : Natural History and Complications." It is sufficiently known that Dr. Mayo's experience in this subject is second to none. Dr. Primrose, of Toronto, is to deliver the address in surgery. In the ophthalmological section, Dr. Casey A. Wood, of Chicago, is to give a paper on "The Operative Treatment of Glaucoma," and Dr. J. P. McKernon, of New York, one on "Modern Methods of Diagnosis in Otological Practice." In the section of obstetrics and gynæcology, Dr. Howard Kelly, of Baltimore, and Dr. J. Clarence Webster, of Chicago, are to give papers. One of the interesting features of the meeting will be the demonstrations of newer methods in diagnosis. In the section of surgery, papers are to be read by Dr. J. T. Pilcher, and Dr. P. M. Pilcher, of Brooklyn, N.Y. Dr. J. Douglas Morgan, of Montreal, is to give a cinematographic demonstration of the normal movements of the stomach. This ought to prove extremely interesting.

While it is natural to lay some stress upon the part to be taken in the programme by visitors from other countries, it can, nevertheless, be said, with some degree of not unjustifiable pride, that the contributions of the members to this year's programme appear to be of exceptional merit. It is clear that a very large body of valuable work along both laboratory and clinical lines is being done in Canada. The work of all the various committees is well advanced. The new medical building, one of the finest on this continent, offers a most convenient place for the meeting; and the number of those coming bids fair to make a record. It may reasonably be expected that this year's meeting in Montreal will be a landmark in the history of the Association.

SMALLPOX AND VACCINATION

SMALLPOX has been cropping out during the past year in so many places in Canada, and the laws in a number of the provinces are either so laxly enforced or rendered so ineffective with "conscience" and other restrictive clauses, that some consideration of the value of vaccination in preventing the spread of smallpox seems warranted. The public mind has been so wrought upon of late by anti-vaccination literature that it has come to look with suspicion, if not with hostility, upon this measure.

As is quite well known, previous to the discovery by Jenner, at the close of the eighteenth century, that an inoculation of cow-pox lymph afforded protection against attacks of smallpox, this disease was one of the scourges of Europe. The mathematician Bernouilli estimated that fifteen millions of persons died every twenty-five years from this cause, and de la Condamine affirmed that it destroyed, maimed, or disfigured one-fourth of mankind. Mercurialis, in the sixteenth century, took it for granted that everyone must have smallpox at least once in his life, and a German proverb, current in the eighteenth century, ran: "Von Pochen und Liebe bleiben nur wenige frei." If the mortality which prevailed in England during the latter half of the eighteenth century were the same to-day, it would represent an annual death rate of seventy thousand persons.

As is also well known, with the introduction of vaccination a profound change in this condition was effected, a change which has brought in England, where vaccination within recent years has not been universally compulsory, the average death rate of four per thousand in the eighteenth century down to 0.013 per thousand during the years 1891-1900, that has made it possible for the Prussian army from 1874 to the present time to escape without a single death from this disease, and that has practically stamped out smallpox in Germany, a

country where vaccination is compulsory from the second year of life. What is being accomplished to-day, however, is not so well known. There has recently been issued from the Treasury Department, Washington, a reprint—Public Health Reports, No. 57, "Smallpox and Vaccination in the Philippine Islands"—which makes the strongest possible case for compulsory vaccination. It is proposed to examine this rather fully.

During Spanish rule smallpox was a most prevalent disease in these islands. It was customary, for instance, in Manila, during the dry season, to erect a large temporary hospital to which many hundreds of smallpox patients could be taken, and where most of them died. And yet during the past five years not one person has died in Manila from smallpox who had been successfully vaccinated during the five previous years, and since June, 1909, not one death from this disease has occurred in this city. Since 1907, when the systematic vaccination was completed of the six provinces near Manila, which have an approximate population of one million, and which before had an annual average mortality from smallpox of at least six thousand persons, not one person has died of smallpox who had been successfully vaccinated, and only a few scattered cases have occurred. During the past two years some deaths were reported, but careful investigation showed that not one of them had been vaccinated.

The policy of persistent, systematic vaccination, inaugurated twelve years ago by the American sanitary authorities, has been attended with excellent results. In the larger cities and easily accessible localities the disease has become mild, relatively infrequent, and death is rare. Severe outbreaks of variola are occasionally reported in some of the remote communities. In these instances, however, it has invariably been found that vaccination has been incomplete. Either it has been impossible to place a potent virus in the field for vaccination, or the people, through ignorance, super-

stitution, or wilful neglect, have failed to avail themselves of the advantages of the measure.

To illustrate the efficacy of a thorough system of vaccination the following illustrations may be considered:

During October, 1910, information was received by the medical authorities that smallpox had broken out among the unvaccinated children of Baler, a town with a population of 2,417 on the east coast of Luzon. There were one hundred cases, and twenty-seven had already died. An average of thirty-five new cases was occurring daily. The people were induced to submit to vaccination. The number of new infections decreased rapidly, and fourteen days after the last person in that town had been vaccinated, about October 20th, no further cases of smallpox occurred.

Through a combination of circumstances vaccination was suspended during a period of nine years in Bagac, an isolated barrio of 2,000 inhabitants in the province of Bataan. Being situated on the monsoon-swept China seacoast, the town is accessible by sea only during short seasons. From 1896 to 1901, when the country was in the throes of war and rebellion, it was impracticable to carry on the work of vaccination, and Bagac was necessarily neglected. Later, protective inoculation was still further delayed by the inability of the provincial physician, through physical infirmity, to reach the town. In 1905 there was a widespread epidemic of smallpox in Bagac. The visiting physician who investigated the outbreak found that there were one or more cases in every house. Especially noteworthy was the fact that a few persons who had been vaccinated during the Spanish régime remained free from the disease. Within two weeks after the completion of thorough vaccination new cases ceased to appear and the town remained free from variola thereafter.

That there is a decided difference between the results obtained by desultory vaccination and those obtained from the institution of thorough measures became apparent in the

last epidemic in the city of Iloilo. In July, 1909, there occurred twenty-one deaths from smallpox in that city. As the disease had always existed to a considerable degree, it was difficult to persuade the local sanitary officials to bestir themselves, but after discussing the subject, they consented to undertake a complete campaign of vaccination. In August there were twelve deaths, in September eight, and in October one. Since that time but one mild case of varioloid has been recorded.

In the province of Pampanga there were 278 deaths from smallpox in 1904, and 168 in 1905. Vaccination was begun early in 1906. In that year there were thirty-five deaths; in 1907, fourteen deaths; and since then, none. During the systematic vaccination of the province of Albay, with a population of 234,000, opposition was met with in the towns of Tabaco and Malinao. Many of the inhabitants remained away until after the departure of the vaccinators. The following year forty deaths occurred in these two towns, the only cases in the entire province. The authorities suppressed the disease by the enforced vaccination of those who had previously escaped, and since then there has been no smallpox in the province.

In January, 1910, the disease broke out in San Esteban. Vaccination was begun on January 26th, after the majority of the cases had developed. The following was the result: January, 126 cases, 29 deaths; February, 75 cases, 22 deaths; March, 10 cases, 6 deaths; April, 1 case, 1 death. Subsequently there were no cases. Of the fifty-eight persons who died, not one had a vaccination scar, nor did any of the one hundred and fifty-four survivors have scars denoting recent successful vaccination.

To take but another example from this interesting and valuable report, prior to 1905 between three thousand and four thousand deaths from smallpox were reported each year in the province of Cebu. In 1905 and 1906 the systematic vaccination of the 650,000 inhabitants was undertaken. In

1907 there were only ninety-four deaths, and in 1908, eighty-four deaths from the disease. As smallpox was apparently on the wane, vaccination was suspended for two years. In the meanwhile there was a decided increase in the number of unprotected people, due to births and immigration from neighboring islands. During 1909 there was a recrudescence of variola, in which seven hundred and thirty-six lost their lives. Investigation proved that over ninety per-cent. of all the cases were among unvaccinated children, that no cases were reported among persons recently successfully vaccinated, and that the small number of adults attacked were nearly all unvaccinated.

The conclusion to be drawn from these cases is a plain one. Smallpox has been breaking out in a surprising number of places throughout Canada, particularly in the Maritime Provinces. It is admitted that there has been no serious attempt of late years to enforce vaccination, except in time of threatened epidemic. The result is, to quote a prominent health officer, that smallpox is lurking in so many corners in eastern Canada that no one need be astonished at its breaking out at any time in any place. Advisory laws have proved a failure. It is surely time for each province to deal with the matter in the one effective manner,—compulsory vaccination, enforced.

THE TREATMENT OF SYPHILIS

IT was in February, 1910, that Professor Ehrlich gave into the hands of Dr. Wechsellmann the results of his 606th experiment to discover a *sterilisatio magna* for cases of syphilis. The substance has been variously named, and is now commonly known as "salvarsan." In the sixteen months which have elapsed a mass of literature has grown up about the subject, which even specialists find difficult to master. The most important publication, of course, was the monograph

by Dr. Wechselsmann with an introduction by Professor Ehrlich himself; but it was written in German and was not readily accessible. Now, however, a translation by Dr. Wolbarst, of New York, has been issued by the Rebman Company, to which is added a review of the literature as late as January of the present year. As an instance of the thoroughness with which the work is done we may mention that Dr. Fitzgerald's paper and the editorial article in the January issue of this JOURNAL are both cited. Ehrlich himself writes the introduction, and Wechselsmann gives a full consideration of the results which he obtained in fourteen hundred cases. The coloured plates are of singular beauty and illustrate most vividly the outcome of the treatment.

Another important work is "'606' in Theory and Practice," by Professor Ehrlich and J. E. R. McDonagh, F.R.C.S., the latter of whom was the first observer in England of the treatment of syphilis by "salvarsan." The book is one of the Oxford Medical Publications, and in the introduction Professor Ehrlich commends Mr. McDonagh's work in establishing the best method of administering the drug and its dosage, as well as when it should be repeated. The book, like Wechselsmann's, is a practical one and is characterized by a wealth of clinical material.

A NEW FORM OF DEGENERATION

IT goes without saying that there is no organ in the human body that undergoes more rapid and more extensive tissue change than does the uterus of woman in connexion with pregnancy, and, more particularly, during the early days post partum, when the process of involution is a veritable storm of metamorphosis. Naturally the alterations in the main component of this organ; namely, the musculature, were the first to be the subject of careful study. But obviously these

are not the only portions of the organ to be seriously involved. The difference between the circulation in the quiescent organ and in the pregnant is extraordinary. Every pathologist for long years has been familiar with the large masses of hyaline and fibrous structure to be encountered in the inner portion of the wall of the multiparous uterus. These masses are more particularly situated under what would seem to be the sites of old placentas, and evidently are in intimate association with the vessels, which, in passing from the hugely distended to the quiescent and contracted stage, undergo a series of alterations unequalled in any other part of the body. These, Balin, in 1880, was the first to investigate, calling attention to the great increase in the thickness of the intima and to the degenerative changes in the media. Other important studies were made by Szasz-Schwarz in 1903 and Pankow in 1906. They noted particularly the great development of elastic tissue. Sohma and other workers in Aschoff's laboratory have made further studies upon this remarkable form of arteriosclerosis, which occurs also, it may be added, in the ovary, in the immediate neighbourhood of the corpora lutea, although there not to the same extreme degree.

It has been left, however, to Dr. Goodall to give an adequate explanation of these striking changes, and this "Study" from the Royal Victoria Hospital should take rank as a contribution of the first order to obstetrical histology. It is, in short, the record of a most careful and conscientious piece of work, based upon the histological study of no less than eighty uteri, and with the solution of the problem Dr. Goodall has enriched pathology by recognizing and establishing a new form of degeneration; namely, the vitreous degeneration of elastic tissue, or, as it may be more briefly termed, "elastoid degeneration." So important is the "Study," we transcribe the title for reference:

"JAMES R. GOODALL. 'The Involution of the Puerperal Uterus, and, more particularly, the Involution of its Circulatory System,—Vitreous Hypertrophy and Vitreous Degeneration

of Elastic Tissue.' Studies from the Royal Victoria Hospital, Montreal. Vol. II, No. 3, 1911."

Since the hyaline masses above referred to lie outside of the functioning arteries, earlier observers had regarded them as developed in and from either the adventitia or the media of the vessels. Employing a combination of Weigert's elastic tissue stain and Van Gieson's, Dr. Goodall has conclusively shown (and the coloured plates well demonstrate the point), that after parturition, coincidently with a striking œdematous swelling of the intima whereby the lumen of the artery is greatly reduced, the internal elastic lamina becomes much swollen. It may swell to eight and ten times its original breadth. At first this swollen tissue retains the characteristic stain with Weigert's reagent, "vitreous hypertrophy," but soon, apparently, it begins to stain imperfectly, and areas can be made out of transition to glassy, non-staining, much convoluted masses, still more swollen "vitreous degeneration." It is these masses, non-stained, non-cellular, inert, and evidently absorbable with difficulty, that constitute the hyaline masses seen by ordinary staining methods. We deal, that is, with a peculiar and hitherto unrecognized degeneration of elastic tissue. The mass may either wholly encircle the artery, or be present around portions of the vessel only, but in either case the old media, lying outside the hyaline mass, undergoes atrophy and absorption, so that the mass comes to lie external to the vessel, while simultaneously a new artery develops within, by growth and rearrangement of the elements present in the swollen intima. According to the size of the artery so may the new formation be composed merely of intima and a partial media, or all three coats, intima, media, and adventitia, become formed within the zone or cylinder of hyaline degenerated matter. In this way in multiparæ there may be evidence of two, three, and more arteries becoming formed one within the other.

It is an astounding process of adaptation whereby the artery, so enlarged and distended that it cannot by mere

contraction return to its resting state, forms from its own elements a new artery within itself, having a lumen adequate for the needs of the uterus at rest. Dr. Goodall deserves the highest credit for having solved the problem. How and whence the new endothelium and muscle elements are derived, the coincident changes occurring in the veins, the relationship between these processes, delayed involution and chronic interstitial metritis, are very fully discussed in this "Study" of some seventy-five pages. We cannot close without expressing our appreciation of the far-sighted liberality of the governors of the Royal Victoria Hospital in publishing at their own expense monographs of this high order of excellence. They cannot but redound to the credit of the institution, and must extend its reputation far beyond the confines of Canada. We note that while dated June, 1910, the monograph has reached us only in March, 1911, and, on enquiry, find that the delay has been due to the printing of the plates in Germany. The plates are so good that we can forgive the delay.

IN a paper entitled, "Milk and its Relation to the Transmission of Tuberculosis," read by Dr. Alexander MacNeill at a recent meeting of the Halifax and Nova Scotia branch of the British Medical Association, Dr. MacNeill dealt fully with the danger that lies in the milk supply had from tuberculous cows, and in the butter and cheese made from such milk. In suggesting a remedy Dr. MacNeill said: "In the first place, I do not think that it could be properly done by any municipality or city, as the product may have been manufactured hundreds of miles away from where it is consumed; therefore it is just as necessary for the people of Halifax to see that butter made in Prince Edward Island is pure, as it is for the residents of the Island. This should be a federal matter." Dr. MacNeill suggests that competent veterinarians and bacteriologists be appointed in each pro-

vince, by whom cattle should be examined, and to whom specimens of milk could be sent. To educate the people, the government might establish stations in the different provinces just as they did when the cheese industry was first started, these continuing for two or three years. Regarding the opposition that might be met with if it were proposed to examine by the tuberculin test all cows, and to destroy those found to be infected, Dr. MacNeill suggests that all cattle be insured by a mutual organization, the premium to be sufficient to pay the loss sustained by the parties having infected herds. In the meantime, steps should at once be taken to ensure pasteurization of milk before it is converted into butter and cheese, and there should be a legal standard of time and temperature to ensure absolute sterilization.

Book Reviews

ENLARGEMENT OF THE PROSTATE. By C. MANSELL MOULLIN, M.D., Oxon., F.R.C.S. Fourth edition. H. K. Lewis, London. Price, 6s.

This is a little book, yet most complete, written in excellent terms by an accomplished surgeon out of his own experience. It is one with which all operators are already familiar, but they will be glad to know that a new edition has appeared. Once more Mr. Mansell Moullin raises his voice in favour of a simple operation before irreparable damage has been done by the indiscriminate employment of catheters.

SYPHILIS. By SIR JONATHAN HUTCHINSON. Twelve coloured and twenty-four black and white plates. New edition. Cassell and Company, Limited, London and New York. D. T. McAinsh & Company, Toronto.

The date of the preface to this, the second edition of Sir Jonathan Hutchinson's book, is November, 1909, and much has happened in the domain of syphilis since that time. No matter how great a degree of success may attend upon the employment of "salvarsan," the value of Sir Jonathan Hutchinson's fine clinical observation will never pass away. It is all recorded in this book.

INTERNATIONAL CLINICS. A Quarterly. Edited by HENRY W. CATTELL, A.M., M.D., Vol. I, twenty-first series, 1911. J. B. Lippincott Company, Philadelphia and London. Charles Roberts, Montreal.

International Clinics grow larger and better as time goes on, and the new editor, Dr. Cattell, has excelled himself in the present volume. He has secured twenty-five contributions, many of them of first rate importance, dealing with the most varied subjects. The article on anterior poliomyelitis by Dr. Neff is remarkably full and fresh, and the one which deals with the cellular basis of the determination of sex, from the hand of Thomas H. Montgomery, is an admirable piece of scientific writing. The study of the mosquito and the results of its activity in the region of the Panama Canal is an excellent summary of the admirable work which has been done by American physicians and engineers in that pestilential country. Mr. J. A. LePrince, who is chief sanitary inspector of the Isthmian Canal Commission, is the writer

and he gives an historical account of the work, which is nothing short of fascinating. The spread of pellagra throughout the United States is dealt with by Dr. George A. Zeller, and it is a most alarming recital. There is an article written by Wechselmann himself upon the treatment of syphilis by "salvarsan"; and although the language and plates are somewhat familiar, the whole paper is none the less interesting. There is a profitable and pleasant summer's reading in this one volume.

OUTLINES OF PSYCHIATRY. By WILLIAM A. WHITE, M.D. Third edition. Nervous and Mental Disease Monograph Series, No. 1. The Journal of Nervous and Mental Disease Publishing Company, New York.

This, the third edition of this excellent work by Dr. White, can be sincerely recommended to all students and practitioners interested in psychiatry. The changes in this edition have been for the most part in the way of moderate elaboration. The introduction of foot-note references to the literature is an addition that one would like to see more common in American text-books. The addition to the discussions of heredity and psychotherapy add to the strength of this chapter. Among other things, a brief description of the psychoses of pellagra has been included. The scheme for a standard, minimum examination of mental cases for use in hospitals is excellent and it would be well if it were introduced in all hospitals.

A TEXT-BOOK OF MEDICINE. By G. DIEULAFOY, Professor of Clinical Medicine at the Faculté de Médecine de Paris; Physician to the Hôtel Dieu. Authorized English translation from the Fifteenth Edition of "Manuel de Pathologie Interne" by V. E. COLLINS, M.D., Lond., M.R.C.S., L.R.C.P., and J. A. LIEBMANN, Ph.D., M.A., LL.D. In two volumes. London: Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, 1910. 8vo. pp. xiv. and 2080. Numerous Illustrations and Coloured Plates. Price 25 shillings net.

Physicians everywhere in the country should be glad that the "Manuel de Pathologie Interne" has been translated into English; its popularity in France is sufficiently attested by the statement that it has reached its fifteenth edition. As all know, Professor Dieulafoy is one of the small group of three or four men who stand foremost among the physicians of France, and no one of them so thoroughly carries on the tradition of Trousseau as he. One sees in this book what every

student of his is familiar with,—his devotion to the teaching and the memory of that great man, whose pupil he was.

There are many physicians in America who have never read a French text-book of medicine, and without recommending it to the beginner in medicine, one can say truthfully that the physician of experience will gain much enjoyment and profit from it. The mode of presenting a case does not greatly differ in the hands of a French and an English physician: the former, perhaps, is more given to the review of the protocol of the illustrative or parallel case, which is, at times, an excellent thing. Both agree in the primary importance of thorough clinical study.

We have said above that the beginner in medicine in our medical schools would not find this text-book the best for his purposes. To exemplify this, we find, under diseases of the lung, in the chapter, Acute Lobar Pneumonia, a description of extra-pulmonary localizations,—such as endocarditis, meningitis, peritonitis, otitis, and so on. This, according to our modes of thought, is actually pernicious: we cannot at all agree with such a classification of disease, for we regard such manifestations as indications of septicæmia, the lung being affected, as are the other sites. "Inflammation of the chest," "spleno-pneumonia," and "biliary pneumonia," are terms which we do not use, and we do not wish our learners to use, because we are in the habit of considering them from a totally different standpoint. It may seem a bold generalization to make, but Professor Dieulafoy is in the habit of making his classifications from clinical grounds, while we do so from a pathological basis. Thus, the average English or American physician will make his diagnosis in simpler, if less exact, terminology. Throughout the book will be found this difference of standpoint; and we, having begun in a certain way, must continue in it, so long as we see no cogent reasons for change. For this reason we do not recommend the book to the beginner.

The physician, or the teacher, who has already fixed ideas of his own, will gain nothing but profit and pleasure from the book: the descriptions of disease have a form new to us, a dramatic force unknown to us, and to find novelty combined with diagnostic soundness (despite what we have just said about terminology), and with therapeutic sanity, will prove most useful to the reader. The chief illustrative cases are not long enough to be tiresome, and are always to the point; best of all, the author inserts a dogmatic personality into many of his statements, which makes his influence upon the reader the stronger, more like the influence of the lecturer than that of the mere writer. This is a quality which would improve many books written by master hands

in English; we tend far too much to make the statement impersonal, following out the convention that has been handed to us as part of our medical entail. Perhaps the only writers in English who use this direct appeal much are the ones about whom we know just enough to distrust them—the writers in our lowest class medical journals. Professor Dieulafoy uses his personality according to the conventions of his race, and the book is much the better for it: his frequent use of the rhetorical question, and the use, in case-reports, of the patient's own diction, is a distinct relief to a reader who has been brought up on the strictly impersonal mode in vogue with Anglo-Saxon writers.

A word may be said about the historic references and the bibliography: these are essentially cognizant of French work, and neglect, in many instances, the work of other nations. The bibliography is not very comprehensive; but, while making this statement, the reviewer realizes that the text-book is not the place to look for bibliographic references. The book is well printed, well bound, and the price is reasonable: we assure readers that they will derive a great deal of profit from the presentation of a subject in the way characteristic of a Parisian clinician. While we have dwelt somewhat fully upon the differences that exist between this and similar books by English authors, we wish to say that there are also many points which are common to both, and that Professor Dieulafoy's text-book will be a valued possession to any one who reads it; and to a reader of some experience, a book from a new standpoint, or even from an opposing standpoint, is better than a book from the old point of view already familiar. To test the book, let any reader in America take the chapter on appendicitis, a subject with which he is probably familiar; he will find it much to his liking.

SYMPTOMATIC AND REGIONAL THERAPEUTICS. By GEORGE HOWARD HOXIE, A.M., M.D. With 58 illustrations in text. New York and London: D. Appleton and Company, 1910.

This book is intended for the use of students, and forms, as the author points out, a course which the student undertakes when he is undergoing his transition from the laboratory to the clinic. There is much useful information therein, although the fact that the subject is necessarily handled from several different standpoints makes the arrangement a little confusing at times: in other words, at one time symptoms are considered as such, at another, as related to particular diseases, and finally, remedies are dealt with in particular. In general, Professor Hoxie's work bears the imprint of a sensible point of view;

he does not appear prone to "hobbies" or to misdirected enthusiasm in favour of this or that mode of treatment. One or two points may be noted: baths with friction—ordinary tub baths—are not sufficiently described; in dealing with meningitis there is no note made of the use of serum; the chapter on obesity contains a misconception of the term "*adiposis dolorosa*," given in the text as "*adiposa*": the illustrations which have been drawn in plain line, diagrammatically, are the best. The volume is well printed, indexed, and bound.

THE HYGIENE OF INFANCY AND CHILDHOOD, AND THE UNDERLYING FACTORS OF DISEASE. By A. DINGWALL FORDYCE, M.D., F.R.C.P., Edin. Messrs. E. & S. Livingstone, 15 Teviot Place, Edinburgh. 289 Pages. Six shillings net.

The author of this work has attempted to correlate, as he puts it, the scientific facts of medicine, particularly recent advances, as they apply specially to pediatrics, his object being to afford busy practitioners an opportunity to keep abreast of the various aspects of pediatric medicine, which otherwise would necessitate wide reading.

The author takes the underlying factors of disease in childhood, considers all the various influences affecting the life of the child, correlates them, and elucidates their relationship to morbid processes. He groups these influential factors under five headings; namely, diet, heredity, environment, bacteriology, and the age period. Dealing with the first, the food factor, the author discusses the chemistry of food and metabolism, and the bacterial flora of the alimentary canal. The outlines of diet for healthy children, which constitutes the next chapter, is too sketchy, and altogether the most unsatisfactory chapter in the book, but the two following chapters on digestion and metabolic disorders, are extremely well done.

The next factor dealt with is that of heredity. After a brief introductory chapter, he discusses, in two chapters, the problem of heredity and its clinical aspects, the first chapter being practically Thompson's theories and views. He thinks that metabolic processes undoubtedly regulate the animal life of the body, and that the gearing of metabolism may certainly be taken as a means of regulating predisposition. He grants that this does not bring us any nearer a realization of the primary exciting cause in inheritance, but it enables us to form a clearer comprehension of the interrelation and interaction of various morbid predispositions. The chapter on the factor of environment is somewhat brief, and deals chiefly with mental, moral, and religious training. General hygiene and athletics are also considered.

In Part IV, which is one of the most interesting and most satisfactory in the book, the author deals with the bacterial factor. A strong point is made of the fact which is now pretty well realized, that both within and without the human body the specific nature of the "seed" is to a large extent determined by the nature of the "soil." The section is divided into chapters on bacterial infection, peculiarities of such infection in childhood, and the characteristics of the peculiar, bacterial infections as they occur in childhood. In these chapters extensive reference is made to the recent works of Wright, Adami, Metchnikoff, and Ehrlich.

Part V deals with the factor of the age period. A good index greatly enhances the value of the book. The author has succeeded in his endeavour, and has produced a book of some originality that will be of great value to the practising physician, whether he be particularly interested in the diseases of childhood or not.

DISEASES OF THE ANUS, RECTUM, AND SIGMOID. For the use of Students and General Practitioners. By SAMUEL T. EARLE, M.D., Baltimore, with 152 illustrations. Philadelphia and London: J. B. Lippincott Company. Canadian Agent: Charles Roberts, Montreal.

The author has undertaken the task of gathering into one volume all the information concerning diseases of the rectum and anus, derived from his own experience and that of others, which would be helpful both to students and the general practitioner. The maladies discussed are very common, but very stubborn and particularly annoying and painful; and Dr. Earle's chief care has been to include the most recent and effective methods of cure, and to give these comprehensively and succinctly. It is proper to add that he has succeeded admirably in his task, and the publishers have embodied the result of his work in a handsome volume of 476 pages, beautifully printed and bound. This is the first occasion on which we remember to have seen the authorities quoted set forth in a separate list. To the name of Adami are assigned seven references. Most of the illustrations are newly drawn. All of them are useful and many are beautiful. We commend, especially, the chapter upon constipation, which occupies forty-seven pages. The author has followed Dr. Illoway's classification of causes, which in itself, in many cases, is sufficient to indicate the appropriate remedy. The book will be no less useful to the surgeon and specialist than to the students and general practitioners for whom it is especially designed.

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By HARRY STURGEON CROSSEN, M.D., Professor of Clinical Gynæcology, Washington University, etc. Second edition, revised and enlarged; 1,025 pages, with 744 illustrations. St. Louis: C. V. Mosby Company, 1910.

The first edition of this book appeared in 1907. In the present work about two hundred pages of text and nearly fifty illustrations have been added. Diagnosis and treatment have been dealt with almost exclusively, and that this has been done with care and thoroughness may be judged from the fact that the first 117 pages, including 117 illustrations, have been devoted to physical examination, in which the methods are good and the descriptions clear. Following this are two hundred pages on general diagnosis, and seventy on general treatment, after which classified diseases are considered. The special feature of this book is its illustrations, which are well reproduced. Some of these, as Figs. 669 and 736, might be omitted as unnecessary, and the description of others, as Figs. 38, 39, and 342, corrected.

The author's method of obviating the accident of having gauze left in the abdomen is worthy of note. He uses only long strips folded up in a small linen bag to the bottom of which the end of the strip is attached. During the operation the gauze may be withdrawn as required and is never, under any circumstances, to be cut off.

LANDMARKS AND SURFACE MARKINGS OF THE HUMAN BODY. By L. BATHE RAWLING, M.B., L.R.C.S. Fourth Edition; pp. 96, and 29 plates. H. K. Lewis, London, 1910.

This little handbook has been used during the present session at McGill University as a text-book for the class in applied anatomy, and is highly recommended. The plates are specially good, illustrating clearly the essential points in the text, and never becoming so complex as to confuse the student. The letterpress is of that excellence which one expects from the publishers, and the price puts the work easily within the reach of every student or young practitioner, to whom it must be of great assistance in recalling a picture which so easily becomes indistinct.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS. Ninth Edition. W. B. Saunders Company, Philadelphia.

This well-known work is now established as one of the standard technical books on the theory and practice of medicine. In the

twelve hundred and ninety pages of this book, the writer presents to his readers a clear and concise statement of the present state of knowledge; and his remarks on treatment are full and judicious. The dosage is stated in both the metric and apothecary's systems, and the prescriptions suggested are sufficiently numerous to satisfy the most ardent supporters of the drug treatment of disease.

THREE CONTRIBUTIONS TO THE SEXUAL THEORY. By PROF. SIGMUND FREUD, LL.D., Vienna. Authorized translation by A. A. BRILL, Ph.B., M.D., New York: The Nervous and Mental Disease Monograph Series, No. 7.

One would like to express appreciation of the work that is being done by the Journal of Nervous and Mental Disease Publishing Company, in bringing before the profession in America the views and theories of Professor Freud on the questions of hysteria, psychoneurosis, obsessions, etc., in such easily mastered forms.

The titles of these contributions are: (1) Sexual Aberrations; (2) Infantile Sexuality; (3) The Transformation of Puberty. However distasteful these subjects may be to many, undoubtedly Professor Freud has done a service to scientific medicine in emphasizing the fact that the sexual must have a great influence on the mental state, and that it is at the bottom of a great many cases of psychoneurosis. Professor Freud has, in this important monograph, put clearly and forcibly his views and theories upon this subject. The criticism that naturally suggests itself is that the method of psychoanalysis, as practised by Freud, is very long and involved, and would, in many cases, seem unnecessary if the doctor acquires the patient's confidence. In any event, it should be practised with tact and circumspection.

One must feel, too, when reading Professor Freud's paper on Infantile Sexuality that the author has been carried away by his enthusiasm. For example: "To be sure, the gratification of the erogenous zone was at first united with the gratification of taking nourishment. He, who sees a satiated child sink back from the mother's breast, and merge into sleep with reddened cheeks and blissful smile, will have to admit that this picture remains as a guide for the expression of sexual gratification in later life." But although they may question here and there, readers will find these three papers most stimulative and suggestive.

SYSTEMIC (INCLUDING SPECIAL) PATHOLOGY. By J. GEORGE ADAMI, M.A., M.D., LL.D., F.R.S., Professor of Pathology, and ALBERT G. NICHOLLS, M.A., M.D., F.R.S. Can., Assistant Professor of Path-

ology, McGill University, Montreal. In one octavo volume of 1,160 pages, with 301 engravings and 15 plates. Cloth, \$6.00 net. Lea and Febiger, Philadelphia and New York, 1911.

This is a very large book. It contains 1,160 pages, and weighs slightly over seven pounds. It is the second volume of the second edition of this great work. The first edition was exhausted within a year of its publication, and the authors have subjected the work to a thorough revision. The changes are not radical or numerous, unless, indeed, in the chapter on the nervous system, which has been done anew, and in the chapter on the ductless glands. The section on the urinary system has been amplified, and the chapters on the respiratory and circulatory systems have been made more coherent. This single volume covers the whole subject of special pathology; and the authors have increased its value, as well as their own labour, by including in it a consideration of the blood and circulatory organs, and of disturbances of function as well as of structure, matters which are usually, and erroneously, as we think, dealt with as a part of general pathology. The guiding principle of the authors appears to be that function and its derangements are the real concern of physicians and structure merely preliminary or accessory to that. This work on pathology gives to the authors and to Canadian medicine a permanent place in the world.

FOOD AND FEEDING IN HEALTH AND DISEASE. A MANUAL OF PRACTICAL DIETETICS. By CHALMERS WATSON, Royal Infirmary, Edinburgh. Oliver and Boyd, Edinburgh and London, 1910. Price, 10/6 net.

This book contains everything that is known about food and the principles of its preparation. It is a complete epitome of dietetics, for the healthy and the sick. It contains information in most complete detail about every substance likely to be employed as food, and furnishes advice upon its ingestion in health and disease. It is amazing that one man should know so much, and still more amazing that he should be able to set forth his knowledge so clearly. No one but a trained editor could accomplish so great a task. The whole book is pervaded by the scientific spirit.

Books Received

GYNÆCOLOGY. Catechism series. Pp. 84, 1s. net. Edinburgh: E. and S. Livingstone, 15, Teviot Place.

A MANUAL OF MEDICINE. By Thomas Kirkpatrick Monro, M.A., M.D., F.R.C.P. and S. Glasgow. Third Edition. 1,023 pages; 42 illustrations. 15s. net. University series. London: Baillière, Tindall and Cox, 8, Henrietta St., Covent Garden, 1911.

FOOD AND FEEDING IN HEALTH AND DISEASE. A MANUAL OF PRACTICAL DIETETICS. By Chalmers Watson, M.D., F.R.C.P.E. 638 pages. 10s. 6d. net. Oliver and Boyd, Edinburgh: Tweeddale Court; London: 10, Paternoster Row, E.C.

SYPHILIS. By Sir Jonathan Hutchinson, F.R.S., LL.D., F.R.C.S. New and enlarged edition. With 12 coloured and 24 black and white plates. 583 pages. Cassell and Company, Limited, London, New York, Toronto, and Melbourne. Canadian agents, Toronto: D. T. McAinsh & Co.

SOME CONSIDERATIONS OF MEDICAL EDUCATION. By S. Squire Sprigge, M.A., M.D., Cantab. 102 pages, 2s. 6d. net. London: Baillière, Tindall & Cox, 8, Henrietta St., Covent Garden, 1910.

CATECHISM SERIES: SURGERY, PART I. Second Edition. 76 pages. 1s. net. Edinburgh: E. and S. Livingstone.

MODERN TREATMENT. THE MANAGEMENT OF DISEASE WITH MEDICINAL AND NON-MEDICINAL REMEDIES. In contributions by American and Foreign authorities. Edited by Hobart Amory Hare, M.D., and H. R. M. Landis, M.D. Volume II. 900 pages. Lea and Febiger, Philadelphia and New York.

THE NON-SURGICAL TREATMENT OF DUODENAL ULCER. By George Herschell, M.D., Lond. 39 pages. 1s. net. London: Henry J. Glaisher, 55-57, Wigmore St. W., 1910.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. December, 1910. New Series. Vol. XIII, No. 4.

CHRONICLES OF PHARMACY. By A. C. Woolton. In two volumes. Pp. 428 and 332; illustrated; 21s. net. MacMillan and Company, Limited, St. Martin's Street, London, 1910.

CESARE LOMBROSO: A MODERN MAN OF SCIENCE. By Hans Kurella, M.D.; translated by M. Eden Paul, M.D. Pp. 194; cloth, price, \$1.50. New York: Rebman Company, 1123 Broadway.

TEXT-BOOK OF OPERATIVE SURGERY. By Dr. Theodor Kocher, Professor of Surgery and Director of the Surgical Clinic in the University of Bern. Third English edition. Translated by H. J. Stiles, M.B., F.R.C.S., Edin., and C. Balfour Paul, M.B., F.R.C.S., Edin. In two volumes. Pp. 723; 415 illustrations.

NEW AND UNOFFICIAL REMEDIES, 1911. Containing descriptions of the articles which have been accepted by the Council of Pharmacy and Chemistry of the American Medical Association, prior to January 1st, 1911. Pp. 282; price, paper, 25 cents; cloth, 50 cents. Chicago: Press of the American Medical Association, 535 Dearborn Avenue, 1911.

ANÆMIA. By Dr. Paul Ehrlich and Dr. A. Lazarus. Part I., Vol. I., Normal and Pathological Histology of the Blood. Second edition. Translated by H. W. Armit, M.R.C.S. Pp. 218; with five illustrations in the text and five coloured plates; cloth, \$4.00. New York: Rebman Company, 1123 Broadway.

HINTS FOR THE GENERAL PRACTITIONER IN RHINOLOGY AND LARYNGOLOGY. By Dr. Johann Feirr, Privatdocent at the University of Vienna. Translated by J. Bowring Horgan, M.B., B. Ch. Pp. 222; with forty figures in the text and two photographic plates; cloth, \$1.50. New York: Rebman Company, 1123 Broadway.

WHAT SHALL I EAT? A MANUAL OF RATIONAL FEEDING. By Dr. F. X. Gourand, formerly chief of the laboratory of the Medical Faculty of Paris. Translated by Francis J. Rebman. Pp. 379; cloth, \$1.50. New York: Rebman Company, 1123 Broadway.

THE MENTAL SYMPTOMS OF BRAIN DISEASE: AN AID TO THE SURGICAL TREATMENT OF INSANITY, DUE TO INJURY, HÆMORRHAGE, TUMOURS, AND OTHER CIRCUMSCRIBED LESIONS OF THE BRAIN. By Bernard Hollander, M.D. Pp. 237; cloth, \$2.00. New York: Rebman Company, 1123 Broadway.

THE MODERN TREATMENT OF ALCOHOLISM AND DRUG NARCOTISM. By C. A. McBride, M.D., L.R.C. P. and S., Edin. Pp. 376; cloth, \$2.00. New York: Rebman Company, 1123 Broadway.

THE TREATMENT OF SYPHILIS WITH SALVARSAN. By Dr. Wilhelm Weichselmann, Berlin, with an introduction by Dr. Paul Ehrlich. Translated by Abr. L. Wolbarst, M.D. Pp. 175; with fifteen textual figures, and sixteen coloured illustrations; cloth, \$5.00. New York: Rebman Company, 1123 Broadway; London, 129 Shaftesbury Avenue.

PHASES OF EVOLUTION AND HEREDITY. By David B. Hart, M.D., F.R.C.P.E. Pp. 259; cloth, \$2.00. New York: Rebman Company, 1123 Broadway.

INTERNATIONAL CLINICS: A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on Treatment, Medicine, Surgery, etc., by leading members of the medical profession throughout the world. Edited by Henry W. Cottell, A.M., M.D., Philadelphia. Vol. I., twenty-first series, 1911. Pp. 300; illustrated. Philadelphia and London: J. B. Lippincott Company, 1911.

THE WASSERMANN SERO-DIAGNOSIS OF SYPHILIS IN ITS APPLICATION TO PSYCHIATRY. By Dr. Felin Plant, Munich. Pp. 188; price \$2.00. Nervous and Mental Disease Monograph Series No. 5. New York: The Journal of Nervous and Mental Disease Publishing Company, 1911.

BIBLIOGRAPHIE DES SCIENCES MEDICALES. Pp. 192; price 1 fr. J. B. Baillière & Fils, Paris, 19, rue Haute-fenille.

A HANDBOOK OF PRACTICAL TREATMENT. Edited by John H. Musser, M.D., LL.D., and A. O. J. Kelly, A.M., M.D. Vol. II. Pp. 865; illustrated, cloth, \$6.00 net; half-morocco, \$7.50 net. Philadelphia and London: W. B. Saunders Company, 1911. Canadian agents, The J. F. Hartz Company, Limited, Toronto.

HANDBOOK OF ELECTRO-THERAPEUTICS. By William James Dugan, M.D., Lecturer in Electro-Therapeutics at Jefferson Medical College, Pa. Pp. 242; with ninety-one illustrations. Philadelphia: F. A. Davis Company, 1910.

ESSENTIALS OF LABORATORY DIAGNOSIS. Designed for Students and Practitioners. By Francis A. Faught, M.D. Pp. 336; containing

an indican scale in colours, eight full-page plates, and numerous engravings. Second revised edition. Philadelphia: F. A. Davis Company, 1910.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D. Pp. 836; with numerous half-tone and line text engravings, and fifty-six full-page half-tone plates, plain and in colours, from original photographs and drawings. Philadelphia: F. A. Davis Company, 1910.

THE PRACTICAL MEDICINE SERIES. Vol. I: General Medicine; edited by Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D. Series 1911; pp. 405; price, \$1.50. Price of the series of ten volumes, \$10.00. The Year Book Publishers, 40 Dearborn Street, Chicago.

PLASTER OF PARIS AND HOW TO USE IT. By Martin W. Ware, M.D., New York. Second edition, revised and enlarged; pp. 102; with ninety original drawings; cloth, \$1.25; de luxe leather, \$2.50. Surgery Publishing Company, 92 William Street, New York, 1911.

"606" IN THEORY AND PRACTICE. By Professor Dr. Paul Ehrlich and J. E. R. McDonagh, F.R.C.S. Pp. 143; with three full-page coloured plates and nine figures in the text, price \$2.50. London: Oxford Medical Publications. Toronto: D. T. McAinsh & Company.

Res Judicata

A NEW THEORY OF SHOCK

A CAPNIA is the term applied to denote a diminished carbon dioxid content in the blood and tissues. It is now generally accepted that the respiratory centre is activated, and the rate of respiration regulated, by the carbon dioxid present in the circulating blood. An excess of carbon dioxid (hypercapnia) is rapidly eliminated by the stimulating effect which it produces upon respiration; on the other hand, a diminished carbon dioxid content following excessive respiration (hyperpnoea) leads at once to the arrest of breathing (apnoea) until the carbon dioxid has again accumulated up to the normal threshold stimu-

lating value of the respiratory centre. It has, further, been shown experimentally that the violent respiratory efforts in asphyxial conditions are due not to the lack of oxygen (anoxhæmia) but to the excess of carbon dioxid (hypercapnia), and that lack of oxygen has purely a paralyzing influence upon the respiratory centre.

Crile's theory that shock was due to failure of the vaso-motor mechanism was based upon the observation that in conditions of shock there was always greatly diminished blood pressure. Shortly after Crile's publication, Seelig and Lyon were able to demonstrate conclusively that, in all but the last stages of shock, vaso-motor activity was increased rather than diminished, thus disproving Crile's contention that diminished blood pressure was the "essential phenomenon."

Since February, 1908, seven papers by Dr. Yandell Henderson, of New Haven, have appeared in the *American Journal of Physiology*, upon the subject of acapnia and its relation to shock. The experimental evidence adduced in support of this new theory would appear to be most complete. It is Dr. Henderson's belief that acapnia, or the excessive ventilation of carbon dioxid out of the blood and tissues, is the fundamental cause of shock.

In man, voluntary forced respiration is invariably followed by a period of apnoea, during which the most distressing symptoms of shock may appear. Animals subjected to rapid artificial respiration for a period of from twenty-five to thirty minutes, will, in a large percentage of cases, die in apnoea from failure of the oxygen supply (anoxhæmia) before the carbon dioxid re-accumulates sufficiently to act upon the respiratory centre. In those animals which recover unassisted, apnoea is periodically interrupted by single deep inspirations as a result of the accumulation in the blood of acidosis substances, the products of incomplete tissue combustion, which have a marked stimulating action upon the respiratory centre, and which, combined with the carbon dioxid present, are capable of sensitizing the respiratory centre in apnoeic and acapnic subjects. Symptoms of profound shock, associated with acapnia, may also be induced in anæsthetized animals by electrical or mechanical stimulation of the sciatic nerve, or by the exposure, handling, or æration of the abdominal viscera; the symptoms being the result of intense and prolonged afferent irritation associated with hyperpnoea.

On the other hand, if voluntary forced respiration is carried on with a loosely fitting bag over the mouth, or if the respiratory dead space is increased by breathing through a length of tubing, it is impossible to induce apnoea experimentally in man, as either procedure prevents a lowering of the normal carbon dioxid tension in the alveoli. In experimental animals rendered apnoeic by excessive pulmonary ventila-

tion, normal respiration is immediately induced by passing a stream of carbon dioxid into the trachea or by the intravenous instillation of Ringer's solution saturated with this gas.

Similarly, in the experiments involving peripheral irritation, where the carbon dioxid content of the blood was maintained at the normal level, either by increasing the dead space of the respiratory tract or, in the case of exposed abdominal viscera, by their immersion in Ringer's solution saturated with carbon dioxid, acapnia and shock were entirely avoided. As Henderson shows, the practice of wrapping exposed abdominal viscera in warm cloths, frequently changed, is a most efficient method of inducing the local acapnia of the tissues which is directly responsible for peristaltic inhibition, vascular engorgement, and loss of mesenteric tonus. The local acapnia resulting from exposure of viscera, together with that induced by previous pain hyperpnœa or by ether excitement, is, in Dr. Henderson's opinion, accountable for the frequency of shock following abdominal operations.

The key to the acapnic theory is to be found only in a clear understanding of the thresholds of the respiratory centre, that is to say, the threshold for carbon dioxid and that for afferent impulses. A third influence, the inhibitory, which is the expression of fortitude, courage, or ability to withstand pain, may here be left out of consideration.

In excessive artificial respiration, in pain hyperpnœa, or in ether excitement, the carbon dioxid content of the blood may be greatly reduced below the threshold stimulating value of the respiratory centre. Certain drugs, such as morphine, chloroform, and ether, raise very greatly the respiratory threshold to afferent impulses, so that, under the influence of the latter two drugs, surgical operations are performed without conscious pain. In other words, the threshold for carbon dioxid is altered very slightly, except in deep anæsthesia, whereas the afferent threshold is greatly elevated. In conditions of acapnia, however, not only is the carbon dioxid content of the blood below the normal, threshold stimulating value of the respiratory centre, but there is an actual rise in the threshold of the respiratory centre to carbon dioxid.

We now come to the crucial deduction—a deduction which is urgently in need of practical confirmation—and that is, that those drugs, such as morphine, ether, and chloroform, which, if administered before the individual has suffered for any length of time, tend to prevent the development of shock by raising the threshold of the respiratory centre to painful afferent impulses, thus avoiding the acapnia which follows upon pain hyperpnœa, increase the tendency to apnœa or the failure of respiration, if given after acapnia has developed. Thus, if to an individual suffering from severe shock secondary to extensive

superficial burns or the crushing of a limb, that is, an individual already acapnic, an anæsthetic be administered, thereby separating more widely the threshold of the respiratory centre and the stimulating value of the carbon dioxid content of the blood, fatal apnœa will almost certainly supervene. Similarly, if to an acapnic subject morphine be administered, failure of respiration may develop. According to Dr. Henderson's theory, supported by the practical results obtained by Dr. Gatch, in Professor Halstead's clinic, these cases should either be given inhalations of ten per cent. carbon dioxid in oxygen, or be allowed to re-breathe oxygen after the method described by Dr. Gatch in the *Journal of the American Medical Association*, March 5th, 1910. These measures are especially indicated as a preliminary to anæsthesia in all cases where symptoms of shock are present, or where pain hyperpnœa is likely to have occurred. Dr. Gatch believes that fatalities under anæsthesia in badly shocked accident cases have been thus avoided.

Space will not permit of a consideration of Dr. Henderson's researches into the influence of carbon dioxid upon pulse rate and blood pressure. It may be said in conclusion that Dr. Henderson has for the first time drawn attention to the existence of a veno-pressor mechanism. To venous dilatation and lowered venous pressure is attributed the fall in arterial tension ascribed by Crile and others to failure of the vasomotor apparatus.

"THE only two animal extracts which we know to be capable, under certain circumstances, of reducing corpulence are thyroid extract and pituitary extract. But if we suppose that either one or the other is competent to bring about a reduction of adipose tissue, as such, we shall encounter many disappointments and not a few disasters. In the case of the thyroid, while admitting to the full its catabolic power of stimulating certain forms of metabolism, I make so bold as positively to assert that it is certainly not imbued with that special hatred for fatty tissue with which it has been credited. I am, on the contrary, strongly of opinion that a normal amount of thyroid essence circulating in the blood is favourable to the development and maintenance of a normal amount of adipose tissue; such at any rate has been the conclusion forced upon me by my experience in exhibiting the extract in that very large class of subthyroidic patients who are unduly thin. When given in excess, thyroid extract will certainly produce emaciation, but it will concomitantly give rise to such symptoms of intolerance as tachycardia, diarrhœa, and mental unrest, which are properly regarded as the tocsins of danger."—*The Practitioner*.

Retrospect of Surgery

A RECENT VISIT TO SOME RÖNTGEN RAY AND RADIUM LABORATORIES IN ENGLAND AND FRANCE

BY ROBERT WILSON, M.D.

Physician to the Western Hospital, Montreal

ONE comes away from a visit to the x-ray laboratories of England and France with mingled feelings, the strongest of which is that in spite of the great work done by the pioneers of radiography in England, and the martyrdom of more than one of their number, the Röntgen ray, and for that matter, electrotherapeutics as a whole, is only just coming into its own. One cannot fail to note the different feeling towards this important therapeutic measure since the British Medical Association incorporated it as a section in its annual meetings, which section, I am told, is always crowded, as is the physical section of the Royal Society of Medicine, which meets once a month.

In England, one is struck by the anomaly that the provincial towns are, with one exception, far ahead of London. This may be accounted for by the fact that in most cases new wards or wings, or, as in the case of Manchester, an entirely new set of buildings, have provided the facilities for adequately housing the equipment. If I had to summarize my impressions in a sentence or two, I should say that what impressed me most was: (1) the wonderfully brilliant work on the kidney by Dr. Thurstan Holland, of Liverpool; (2) the work on the stomach by Dr. Barkley, of Manchester; (3) the original work of Dr. John Macintyre, of Glasgow; (4) the radium work of Dawson Turner, of Edinburgh; Robert Knox, of London; and Louis Wickham, of Paris; (5) the completeness of the equipment of the London Hospital, both in the radiographic (diagnostic) and the therapeutic departments; (6) the enormous electrotherapeutic and radiotherapeutic departments and clinics of the Saltpêtrière and St. Louis hospitals, Paris.

In the four months I devoted to my trip, I visited Liverpool, Chester, Manchester, Glasgow, Edinburgh, London, and Paris. The work naturally divides itself into three parts: (a) that done in the so-called provincial towns of England; (b) in London; (c) in Paris. Obviously, in so short a time, I could not visit any of the French provinces, much as I should have liked to go to Lyons and Nantes, where Dr.

Stephan Leduc has done so much in elaborating a method of giving the electric current so as to produce general anæsthesia.

In England, conservatism is the note. A lot of good work is seen, of which the world has not yet heard, because the workers are waiting the test of time before publishing their results. Some keep very full records, while some do not, and one feels the need of a standard committee and of a suitable standard of reporting, to make the reports uniform and valuable for reference. While one is more or less impressed with the amount of work done in radiotherapy, it is only when one attends such hospitals as the London, or the St. Louis, that one becomes convinced of the large and indispensable part played by electricity in the modern practice of medicine,—large daily clinics, working from 8 a.m. till 6 p.m., whole wards devoted to radiotherapy, and, in the larger hospitals, a separation between the electrotherapeutic and radiotherapeutic clinics, as in the Saltpêtrière, or the London, or Guy's, or the St. Louis.

Of equipments, in England favour seems to be equally divided between the high tension transformers, with rectified secondary discharge of the "Snooks" type, and the so-called "intensive" type of induction coil, characterized by a small primary current consumption, and flaming secondary, with, I am afraid, a corresponding increase in the amount of inverse. In Paris, naturally, the Gaiffe-Rochefort apparatus is largely used. This is simply an open core transformer (coil), standing on end. The Rochefort insulation of the secondary is practically proof against break-down, and by using a synchronous motor-interrupter, the alternating current may be used equally with the direct.

LIVERPOOL. The plates of Dr. Holland, showing the work he has done on the kidney, were a revelation. His private installation is a heavy discharge 12-inch coil, with mercury and Wehnelt breaks. The time of exposure averages fifteen seconds, and the plates look like steel engravings. His method of mounting the calculi on the print in their position, and keeping the plate in the same discarded plate-box, is unique, and is unexcelled for demonstration purposes. At the Royal Infirmary a Snooks is used, as well as a 12-inch coil.

MANCHESTER. Dr. Barkley has twelve rooms in the Royal Infirmary devoted to radiographic and treatment work. Coils are used of the new type, both for diagnostic work and treatment. As might be expected with this worker, the facilities for stomach screening are very complete. It is a valuable lesson in technique to see Dr. Barkley screen a stomach, and watch the bolus descend into the stomach, spread over the surface, see the contractions of the stomach wall, the arrest at the pylorus, and the breaking off of a piece to be gradually lost in the duodenum.

His observations that a simulated hour-glass stomach may be eliminated by a vigorous rubbing of the abdominal wall, and that a malignant obstruction of the cardiac end of the stomach may be perfectly simulated by a small ulcer in that region, are too valuable to be forgotten.

GLASGOW. Work in Dr. Riddle's department at the Royal Infirmary was more or less upset, owing to building operations. One large room was being used for static, galvano-faradic, and *x*-ray treatments, and, in addition, there was a radiographic room, with a 20-inch Schall coil and equipment, and an office. Here I met Dr. Macintyre, the pioneer in *x*-ray work in England. At his office I saw the original Max Kohl 28-inch coil, which he used in 1896 to make the first radiographs in England of the spine and of the heart. Here, also, I saw the first picture showing detail in the soft tissues, a skiagram of the larynx, showing the hyoid, the thyroid, and the cricoid cartilages, the rings of the bronchus, and the tongue and muscles of the neck; the first picture of a foreign body in the oesophagus; the first instantaneous radiograph ever taken, done by means of a thin steel band, with a contact at its lower end dipping into mercury, drawn taut, let go, and locking on the other side, thus making but one make and break on its way across, and thus through a series of plates and exhibits. We discussed many things (for John Macintyre is no mean craftsman, and can do things with his hands), from stereoscopy to the merits of the various colour plates and processes, and from the construction of static machines, to the value of microscopy with quartz lenses and ultra-violet light, till, at the end of two hours, I had to come away, carrying with me the impression of a very simple, courteous gentleman who had touched life at many points, and who, while at the head of his chosen work on the nose and throat, had found time to blaze a path in a branch of science along which few, if any, had advanced much beyond his pioneer footsteps, even after fifteen years.

At the Western Infirmary, the outfit under Dr. Sommerville is admirably housed, a 20-inch Newton coil being used. At the Victoria Infirmary, Dr. Macgregor in charge, the large room has an 18-inch Newton coil. In all three, the protection to the operator is poor.

EDINBURGH. I must confess to much disappointment with Edinburgh's Royal Infirmary. Speaking with reserve, for I did not have an opportunity of seeing Dr. Dawson Turner's private work, it was much below what I had seen at Glasgow, or Liverpool, or what the outfit seemed capable of doing; for instance, three minutes with a 28-inch coil, for a kidney, seems to defeat the very object of the radiograph, i.e., sharpness of detail. Nowhere have I seen frontal sinus work to compare with that done on this side, say by Dr. Caldwell, of New York, and no two were agreed as to the best angle. Few, indeed, were

familiar with Dr. Caldwell's work. But what is lacking in the radiographic work is more than made up in the radium clinic of Dr. Turner. He is lucky enough to have no less than five tubes of radium of varying strengths.

LONDON. I visited a great many hospitals in London, but there is at present only one fitted throughout with modern equipment, and that is the London Hospital, where the department is under Dr. Gilbert Scott. Most of the other hospitals are handicapped by the high cost of the modern equipment, and the cost of adequately housing it. I should like to describe in detail the London Hospital outfit, because I think it is the most complete installation in England, probably anywhere. The radiographic room is large, about twenty by twenty-five feet, and has a Deane's upright screening unit, i.e., the tube is in a protected box, which traverses, lifts, and lowers by rack and pinion and parallel diaphragms worked from the front by flexible shafts. The screen is balanced, moves up and down, is protected by a heavy lead glass, and has a cassette for the plate between it and the patient. The patient is steadied by an upright, rotating post with bicycle seat, clamped at the base from the front. The coil, a 16-inch Deane, is mounted on top of the screen, and is controlled by a switchboard of Dr. Scott's design. The current is a 220 volts d.c. and the series resistance varies this from fifty to two hundred volts. There are switches for the Mackenzie-Davidson and 3-point Wehnelt interrupter, and for the variable primary, controlling not only the number of ampère turns, but the accompanying varying thickness of wire, a refinement I have never known used before. This board is within reach while screening, so that the tube is under absolute control. The radiographic table is a Deane, all metal except the bed, which is triple veneer, and very rigid. It has three sets of tube holders,—one on a trolley beneath the table, one on a trolley about thirty inches above the table, and one on a movable trolley running along the edge of the table, fitted with a stereo-attachment and compressor unit, a diaphragm shield, and, at the end of the funnel, a spherical piece of aluminium for compression in kidney radiographs. The "Pirie" glass is used for examining stereograms. On the outdoor side are the emergency x-ray room, the photographic studio fully equipped, and the treatment cabinets. The former is a replica of the indoor set, and the studio is used to photograph all interesting cases, which are filed with the case histories. The treatment cabinets are four in number, arranged alongside each other in the form of complete units. Each cubicle has lead-lined sides, floor, and roof, with heavy lead glass windows in the door, and contains the couch, tube-holders of protective material, and an electric light bulb. On

top, outside the cubicle proper, but cased in from the room with a glass front, is the coil, a 12-inch Deane. The doors are fitted with break-switches, so that the tube cannot be started till the door is closed. Outside the door is the switch-board and mercury-dip interrupter, with attached counter and automatic throw-off switch.

In practice, the patient is placed in the cubicle, the Sabouraud-Noiré pastille is fixed, the dial of the interrupter is set to give the right number of dips, and when the door is closed, the electric light goes out, the coil starts, and at the end of the treatment for which the interrupter was set it automatically breaks the circuit, stops the coil, lights up a small red lamp outside the door, and rings a bell for two seconds. So complete is the protection, that an x-ray plate placed outside the cabinets for one hour, while the tubes were running, was free from fog, a pretty severe test. One attendant is thus able to attend to four patients at once. The lesions treated are mostly lupus, rodent ulcer, post-operative raying, tuberculous adenitis, ringworm of the scalp, and other dermatoses. The workers are busy ten hours a day.

The system of indexing is very complete and compact, and is by card. In addition to the usual alphabetic divisions, each card has a small projection one-twelfth its length, and is numbered. These correspond to twelve regions into which the body is more or less arbitrarily divided. These are further subdivided by coloured pencils in all very interesting cases, so, that at a glance, one may pick out any special plate, though there is only one writing to it all.

Alongside the x-ray rooms, is the "Alexandra" Finsen ray room, with two 30,000 candle-power Finsen lamps, each with four arms, and several of the "Reyn" type lamps around the wall. The room is always full. Treatment begins at 8 a.m. and continues till 10 p.m. As each patient requires a nurse, it is expensive in staff charges as well as current consumption. One cannot help feeling that but for the personnel of the givers, the department would be much better devoted to the x-ray, radium, or carbondioxide treatment of these cases.

Space forbids any mention of the x-ray work of the other English hospitals, or of those of France, while I must reserve for another occasion the consideration of the work done in Wickham's radium clinic, in Paris, and the work of Robert Knox, of the Brompton cancer hospital, in London.

Notwithstanding all that has been done in recent years, there is a large and unexplored field waiting development: the question of effective screening in treatment; an exact measure of the energy given out by a tube; the efficacy of cross-fire in certain cases; the elaboration of methods of obtaining series of rapidly consecutive radiograms of the

internal organs, such as the heart, lungs (diaphragm and rib movement) and the stomach. The value of the motion picture as an aid to the study of the physiological action of the organs is hardly appreciated although it is about six years since Schönberg and Hainish of Hamburg attempted and succeeded in obtaining such cardiograms.

DR. JAMES BELL: BIBLIOGRAPHY

THE following is a bibliography of the writings of the late Dr. James Bell, professor of clinical surgery, McGill University. It may be recalled that Dr. Bell was one of the first in Canada to formulate and carry into practice the principles of the modern operation for appendicitis. At a time, twenty-five years ago, when operations on animals were the rarest of events, he took care to perfect his technique in work on the intestine by experimental work. He was the first in Canada to recognize actinomycosis in its surgical manifestations, and within three or four years collected and reported a series of thirteen cases of this disease. He acquired an exceptional experience in the radical operation for laryngeal cancer, and read a valuable paper on the subject before the American Surgical Association two years ago. His ability as a diagnostician was particularly evidenced in one remarkable case in which he foretold the presence of a hair-ball in the stomach, and then removed it successfully. In the twenty odd cases of this condition hitherto recorded, the diagnosis had never been made before operation. In the operative treatment of luxation of the semilunar cartilages of the knee-joint, he originated and ably defended the principle of laying the joint widely open by going through the patella.

WRITINGS PUBLISHED IN THE MONTREAL MEDICAL JOURNAL

- 1888.—"Sutured Patella," Vol. xvii, p. 32; "Case of Skin-grafting," Vol. xvii, p. 104; "Case of Exostosis Bursata," Vol. xvii, p. 106; "Case of severe Syphilis," Vol. xvii, p. 531; "Separation of Epiphysis of lower End of Femur," Vol. xvii, p. 540; "On the Nature and Prevention of Urethral Fever," Vol. xvii, p. 561; "Case of Appendicitis," Vol. xvii, p. 620; "Urinary Calculus removed by Suprapubic Lithotomy," Vol. xvii, p. 829; "End of Femur from Re-amputation for Painful Stump," Vol. xvii, p. 843; "Fragments of Tissue removed from Tuberculous Knee Joint," Vol. xvii, p. 843; "Dry Gangrene of Fingers from Thrombosis of Brachial Artery," Vol. xvii, p. 845.
- 1889.—"Removal of Appendix Vermiformis," Vol. xviii, p. 224; "Rupture of the Ileum," Vol. xviii, p. 225; "Multiple Fibroma of Skin and Nerves," Vol. xviii, p. 528; "Three Cases of Fracture of Sixth Cervical Vertebra," Vol. xviii, p. 911.
- 1890.—"Epithelioma of the Tongue," Vol. xix, p. 445; "A Rare Form of Kidney Tumour," Vol. xix, p. 561; "A Case of Rhinoplasty," Vol. xix, p. 704; "Tubercular Testes," Vol. xix, p. 841.
- 1891.—"Spina Bifida," Vol. xx; "Acute General Peritonitis following Rupture

of an Ovarian Cyst; Operation and Recovery," Vol. **xx**; "Case of Gastro-enterostomy," Vol. **xx**, p. 831; "Excision of the Wrist," Vol. **xx**, p. 934.

1892.—"On a Fatal Case of Acute Peritonitis," Vol. **xxi**, p. 81; "Laparotomy for Intestinal Perforation in Typhoid Fever," Vol. **xxi**, p. 451; "Double Nephrolithotomy," Vol. **xxi**, p. 702; "Hernia of an Ovary through the Inguinal Canal in an Infant," Vol. **xxi**, p. 841; "Second Series of Cases of Skin Transplantation by Thiersch's Method," Vol. **xxi**, p. 881.

1893.—"Two Cases of Appendicitis," Vol. **xxii**, p. 132; "Paralysis of Arm following Application of an Esmarch's Bandage," Vol. **xxii**, p. 280; "Some Unusual Conditions met with in Hernia Operations," Vol. **xxii**, p. 348; "Removal of Gasserian Ganglion for Facial Neuralgia," Vol. **xxii**, p. 615; "Valedictory Address delivered to Undergraduates in Medicine at the Annual Convocation of the Medical Faculty of McGill University," April 5th, 1894, Vol. **xxii**, p. 721; "Series of Cases of Streptococcus Infection," Vol. **xxii**, p. 801; "Talipes Equino-varus," Vol. **xxii**, p. 846; "Compound Depressed Fracture of the Occipital Bone," Vol. **xxii**, p. 848; "Gall Stone," Vol. **xxii**, p. 851.

1894.—"A Year's Experience in Appendicitis," Vol. **xxiii**, p. 177; "Chloroform Accident," Vol. **xxiii**, p. 217; "Old Dislocation of Hip-joint treated by Resection," Vol. **xxiii**, p. 291; "An Appendix containing an Ordinary Pin as the Exciting Cause of a Perforating Appendicitis," Vol. **xxiii**, p. 297; "Calcereous Tumour of Thyroid producing Oesophageal Obstruction," Vol. **xxiii**, p. 297; "Tumour of the Prostate," Vol. **xxiii**, p. 298; "Obstructive Jaundice," Vol. **xxiii**, p. 303; "End to End Anastomosis of Intestines by means of the Murphy Button," Vol. **xxiii**, p. 481; "Note on a new Ether Inhaler," Vol. **xxiii**, p. 833; "Case of Death from Chloroform," Vol. **xxiii**, p. 891; "Aneurysm of Femoral Artery treated by Ligature of External Iliac Artery," Vol. **xxiii**, p. 936; "Sarcoma of Ileum; Resection with Murphy Button; Death," Vol. **xxiii**, p. 939.

1895.—"Aphasia with Left Hemiplegia," Vol. **xxiv**, p. 269; "Operative Treatment of Movable Kidney," Vol. **xxiv**, p. 328; "Temporo-sphenoidal Abscess following Middle-ear Disease," Vol. **xxiv**, p. 471; "Vesical calculi with Specially Interesting Features," Vol. **xxiv**, p. 476; "Discussion on Carcinoma," Vol. **xxiv**, p. 614; "Gall-stone Specimens," Vol. **xxiv**, p. 824.

1896.—"Brain Cases," Vol. **xxv**, p. 274; "Large Mouth Concretion," Vol. **xxv**, p. 789; "Renal and Vesical Calculi," Vol. **xxv**, p. 791; "An Extreme Degree of Talipes Equinus," Vol. **xxv**, p. 793; "Three Cases of Carcinoma of Middle and Upper Portions of Rectum," Vol. **xxv**, p. 929.

1898.—"Notes on Some Recent Gall Stone Cases," Vol. **xxvii**, p. 1; "Osteomyelitis of the Tibia and Femur," Vol. **xxvii**, p. 225; "Two Cases of Suprapubic Cystotomy with Unusual Features," Vol. **xxvii**, p. 305; "A Case of Laryngectomy," Vol. **xxvii**, p. 384; "Intestinal Obstruction by Meckel's Diverticulum," Vol. **xxvii**, p. 387; "A Series of Cases of Calculous Obstruction of the Common Bile Duct, treated by Incision and Removal of Calculi," Vol. **xxvii**, p. 725.

1899.—"Case of Diffuse Hypertrophy of the Breasts," Vol. **xxviii**, p. 772.

1900.—"Treatment of Cancer of the Female Breast," Vol. **xxix**, p. 812.

1901.—"Case Reports with Specimens: Resection of Colon, Osteomyelitis, Amputation," Vol. **xxx**, p. 95; "Omental Hernia with Abscess in the Sac," Vol. **xxx**, p. 233; "Three Cases of Abscess of Lung Treated," Vol. **xxx**, p. 329.

1902.—"Case of Multiple Myeloma," Vol. **xxxi**, p. 336; "Foreign Bodies in the Vermiform Appendix," Vol. **xxxi**, p. 765; "Cases Exhibited by Dr. Bell at the Surgical Demonstration in the Royal Victoria Hospital," Vol. **xxxi**, p. 817.

1903.—"Case Reports," Vol. **xxxii**, p. 94; "Two Cases of Myelo-sarcoma of Long Bones," Vol. **xxxii**, p. 299; "Rupture of the Spleen," (with Dr. Dickson), Vol. **xxxii**, p. 545; "Hair-ball in the Stomach, Operation, Recovery," Vol. **xxxii**, p. 94; "Three Genito-urinary Conditions," Vol. **xxxii**, p. 95.

1904.—"Migration of Needles from the Intestine into the Surrounding Tissues," Vol. **xxxiii**, p. 108.

1905.—"Actinomycosis," (part of Symposium); Introduction and Recital of Cases,

Vol. xxxiv, p. 81; "A Case for Diagnosis," Vol. xxxiv, p. 198; "Chronic Human Glanders," (with Dr. Robins), Vol. xxxiv, p. 538; "Enormous Distension of Common and Hepatic Ducts with Facetted Stones," Vol. xxxiv, p. 543; "Gangrenous Intussusception of Small Intestines," Vol. xxxiv, p. 619; "Cerebellar Tumour," Vol. xxxiv, p. 619; "Excision of Larynx and Portion of Pharynx and Oesophagus," Vol. xxxiv, p. 620. 1906.—"A Case of Carcinoma of Upper End of Oesophagus; Perforation into Trachea," (with Dr. McCrae), Vol. xxxv, p. 501. 1908.—"Excessive Length of the Sigmoid Flexure and its Surgical Significance," April, 1908; "Portal Infection Originating in Appendicitis," Vol. xxxvii, p. 870. 1909.—"Excision of Larynx and Pharynx for Carcinoma," Vol. xxxviii, p. 31; "Total Excision of the Floor of the Mouth for Sarcoma of the Jaw," Vol. xxxviii, p. 133; "Perforative Appendicitis, Venous Thrombosis, Paratyphoid, Intestinal Obstruction," February, 1909; "Cancer of the Prostate," ("The Address in Surgery at the forty-first Annual Meeting of the Canadian Medical Association,") Vol. xxxviii, p. 573.

ARTICLES PUBLISHED BY DR. BELL IN VARIOUS OTHER JOURNALS

"Statistical Review of Cases of Typhoid Fever, Pneumonia, and Acute Rheumatism, Treated in the Montreal General Hospital during the Ten Years ending May 1st, 1879, with Remarks Thereon," Montreal General Hospital Reports, Vol. I, 1880. "Two Cases of Syphilis having a Bearing on the Question of the Period during which it is Communicable," *Journal of Cutaneous and Genito-Urinary Diseases*, 1895, Vol. xiii. "A Case of Abscess of the Temporo-Sphenoidal Lobe, presenting Unusual Features; Operation with Recovery," *Annals of Otology, Rhinology and Laryngology*, St. Louis, 1898, Vol. vii, pp. 29-32. "Report of a Laryngectomy for Epithelioma," *American Journal of Surgery and Gynaecology*, 1898-9, Vol. xi. "Removal of the Larynx," *Canada Lancet*, 1902-3, Vol. xxxvi, p. 309. "Remarks on the Surgical Diagnosis of Diseases of the Gall Bladder and Bile Ducts," *Canada Lancet*, 1902-3. "A Case of Acute Pancreatitis Associated with Gall Stones," *Trans. Amer. Surg. Assoc.*, Vol. xxii, 1904. "Hypernephroma of the Kidney," *Canada Lancet*, June, 1905. "Operative Treatment of Irreducible Luxation of the Semilunar Cartilages of the Knee-Joint," *British Medical Journal*, November 10th, 1906. "Excision of Larynx for Carcinoma," *Annals of Surgery*, 1909, pp. 192-199. "Excision of the Larynx for Carcinoma," *Tr. Amer. Surg. Assoc.*, 1909, Vol. xxvii, pp. 87-97. "Articles in Buck's Reference Handbook," 1889, Vol. iv, "Enterectomy, Enterorrhaphy, Enterotomy," Vol. viii; "On Drainage of Wounds," Vol. viii. The Surgical Diseases of the Kidney and Ureter. (Article shortly to be published in Bryant and Buck's *American Practice of Surgery*, Vol. viii, an exhaustive piece of work upon which Dr. Bell had been engaged for the last four years of his life.)

News

THE annual report of the Medical Health Officer for Hamilton shows that for the year ending October 31st, 1910, the number of births registered was 1,966, or about 27 per thousand of population. The rate of the previous year was 26, that of 1905, 1906, and 1907, being 22. The death rate was 13.8 per thousand, a slight increase over the previous two years. The infant mortality was high,—28.5 per cent. During the year there were 152 cases of diphtheria, of which 23 proved fatal.

THE sixth annual report of the Provincial Sanatorium, Kentville, N.S., has been issued. The report is of special interest in that during the year considered, 1910, this institution was for the first time placed in charge of a resident physician, and only those patients were admitted who had a good chance for cure or arrestment of disease. The medical report shows that during the year seventy-one patients were treated. Of these, fifty-four were discharged and are reported upon. Eleven per cent. were apparently cured, forty-three per cent. arrested, and thirty-three per cent. improved. Disease progressed in only one case admitted since January 1st, 1910, and there were no deaths in the sanatorium during the year. The medical superintendent emphasizes the fact that to ensure the best results patients should remain three months or more. The results of the year show that among those patients who remained less than three months, there were no apparent cures, and the average gain in weight was 7.5 pounds, while of those who remained three months and more 37.5 per cent. of the incipient cases, and 11.1 per cent. of advanced cases were apparently cured, and the average gain in weight was 16.4 pounds.

THE seventh international congress of Dermatology and Syphilography meets in Rome, Italy, from September 25th to 29th, 1911, under the presidency of Senator De Amicis Tommasso, of Naples. The general secretary is Dr. G. Ciarrocchi, 5 Piazza Grazioli, Rome. Printed blanks to be filled in by those wishing to attend the congress can be obtained from the local secretary, Dr. G. Gordon Campbell, 117 Metcalfe Street, Montreal. The membership fee is \$5.00. The subjects set apart for special consideration at the congress are: (1) What influence have the new etiological, diagnostic, and experimental researches exerted upon the treatment of syphilis? (2) The results of physiotherapy upon diseases of the skin. (3) Blastomycosis, sporotrichosis, and their relation to analogous processes. The executive have made arrangements with the Italian railways for a reduction in rates of from forty to sixty per cent. below the regular fares. In order to obtain this reduction, members attending the congress must provide themselves with a special card "tessera," which can be bought for 10.50 francs at all the railway stations, including those at the frontiers and principal agencies in Italy. Along with the tessera the purchaser receives a book containing eight coupons, each of which is good for a side trip at the above reduction for a period of forty-five days from the date of issue.

THE fifteenth international congress on Hygiene and Demography

will be held in Washington, D.C., during the week of September 23rd-30th, 1912. Invitations to participate in the congress have already been accepted by twenty-two foreign governments, including Argentina, Austria, Belgium, Brazil, Cuba, Denmark, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Mexico, Norway, Russia, Spain, Sweden, and Switzerland. Active membership in the congress is open to any person interested in public health or vital statistics, on payment of a fee of \$5.00, which also entitles him to participate in the proceedings and to receive a copy of the published transactions. The continuity of the congress with those that have preceded it is maintained by a permanent international commission, with headquarters at Berlin.

THE medical faculty of McGill announces that an extended course of studies for graduate students will be given during this summer. Beginning on Monday, June 12th, the course will be continued for a period of six weeks, during the first half of which the work will be conducted in the Montreal General Hospital, and during the second half in the Royal Victoria Hospital. The course is open to graduates of medical schools in good standing. The fee, including registration, is \$50. Information concerning the course will be furnished by the registrar of the medical faculty, McGill University.

THE third international Housing Congress will meet in Dresden from October 2nd to 7th, 1911. It will be divided into nine sections, which will embrace four groups. Group A comprises Sections I to IV, Group B Sections V and VI, Group C Sections VII and VIII, and Group D Section IX. Section I relates to building generally, including municipal and garden cities; Section II to the details of compartments, material, floors, roofs, stairs, etc.; Section III relates to heating, lighting, and ventilation; Section IV to cleaning, refuse removal, and disinfection; Section V relates to town building, and Section VI to country building; Section VII relates to building of schools, prisons, hotels, hospitals, bathing establishments, churches, theatres, etc.; while Section VIII relates to factories and railway stations, ships, wagons, etc.; and Section IX relates to laws, administration, and statistics. The official languages of the congress are German, English, and French. Further particulars may be obtained from the general secretary, Dr. Hopf, Reichsstrasse, 4, II, Dresden.

THE report of the Winnipeg General Hospital for 1910 shows that there were admitted to the hospital during the year, 5,935 patients,

who were given 114,938 days of treatment. During the previous year, 5,371 patients were accorded 108,659 days of treatment. In the surgical department there were 2,295 operations, an increase of 579 over 1909. The x-ray department accounted for 3,128 treatments and radiographs. The percentage of deaths advanced from 6.63, in 1909, to 6.82. Deducting the number of deaths which occurred within forty-eight hours after admission, the death rate was 4.9, a slight advance, 0.03, over the previous year. There were 1,814 ambulance trips, 2,997 indoor patients treated, and 7,660 outdoor consultations. The necessity for the appointment of some official connected with the hospital, whose duty would be to visit the homes of needy patients, visit discharged patients and see that they are put in a position to carry out the doctor's orders, relieve the anxiety of patients in the public wards of the institution, etc., led the board to establish a "Social Service Department." The Winnipeg General Hospital is the first hospital in Canada to establish such a department, and although in existence for so short a time, the superintendent reports that it has been of essential service both to the institution and the patients.

THE corner stone of the new Toronto General Hospital was laid April 11th by Lord Grey. The grounds cover ten acres in the middle of the city.

REPORT from the health department of Montreal shows that there was less contagious disease in that city during the past winter than for any similar previous period. The total number of cases in the various diseases during December, January, February, and March was as follows: diphtheria, 332; scarlatina, 342; typhoid, 112; measles, 2,768; German measles, 25; chicken pox, 124; tuberculosis, 428; whooping cough, 63; erysipelas, 60.

SPECIFICATIONS have been completed of the proposed filtration plant for the water supply of Montreal. The system is expected to be completed in September, 1913, and will cost about \$2,000,000. The plans call for a pre-and main filter, and the plant will supply 50,000,000 gallons of water daily.

Obituary

DR. WILLIAM NATHAN WICKWIRE, of Halifax, died March 31st. Dr. Wickwire was born at Cornwallis, Nova Scotia, in 1839. After an Arts course at Acadia, from which college he received the degree of Master of Arts in 1862, he went to Edinburgh, where he studied medicine, graduating in 1864. He then returned to Nova Scotia and entered into partnership with Dr. Charles Tupper. In 1866 he was appointed assistant health officer at Halifax. In 1872 he became chief medical officer, holding that position for twenty-seven years. For twenty years he was vice-consul of the Netherlands in Halifax. About 1889, Dr. Wickwire discontinued the practice of medicine, and until his death he was prominently identified with important commercial enterprises. He was a director of the Eastern Trust Company, and manager of the Nova Scotia Breweries. He married on June 28th, 1870, Margaret L., daughter of the late Honorable Alexander Keith, who, with one son, William Keith Wickwire, survives him.

DR. ALEXANDER BETHUNE, who up till a few years ago practised medicine at Seaforth, died at Emo, Ont., April 8th. Dr. Bethune was born in 1834, and for half a century was a familiar figure in the life of Wentworth district. For several years he was a representative on the Ontario Medical Association. He practised first at Mount Hope and later at Seaforth, from where he retired a few years ago to live with his son, Dr. F. Bethune, at Emo.

DR. HERBERT B. HUTTON, of Port Colborne, Ont., died of heart disease, April 8th, 1911. Dr. Hutton was born at Kincardine in 1878, and graduated in medicine in 1902 from the Toronto Medical School. After a post graduate course in New York city he settled in Port Colborne, where he practised until his death.

DR. DONALD C. SUTHERLAND, of Saginaw, died April 12th, 1911. Dr. Sutherland was born in Bradford, Ont., in 1842, and was one of the first graduates of the Ontario Veterinary College. He went to Saginaw in 1869, where for many years he was state veterinary.

DR. GEORGE BAYNHAM, of Brookdale, Man., died April 10th, 1911. Dr. Baynham was born in Ontario in 1880, and graduated in 1908 from the Manitoba Medical College.

DR. J. D. ROSS, of Moncton, died April 14th, 1911. Dr. Ross was born in Pictou, in 1839. He practised for some time in Dartmouth, and aided in the establishment of the Halifax Medical School, in which institution he was demonstrator in anatomy during the first two years of its existence. He later removed to Moncton, where he was instrumental in founding the Moncton hospital.

Canadian Literature

ORIGINAL COMMUNICATIONS

Le Journal de Médecine et de Chirurgie, April, 1911:

Nécessité de l'inspection médicale des élèves et de
l'inspection sanitaire des maisons d'éducation
dans la province de Québec . . . Joseph Edouard Laberge.

Le Montréal-Médical, April, 1911:

Le traitement de l'accès de goutte Albert Robin.
Ce qu'il faut entendre par lymphatisme et scrofule
D. E. LeCavelier.

L'Union Médicale du Canada, April, 1911:

La subdivision de la province de Québec au point
de vue hygiénique Dr. Beaudry.
Les irréguliers et les rebouteurs devant la législature
de Québec Albert LeSage.

Dominion Medical Monthly, April, 1911:

The Untoward Results of Delayed Operations and of
Incomplete Operations Alexander Primrose,

The Western Medical News, March, 1911:

The Orthopedic Aspect of Gonorrheal Infection
 Herbert P. H. Galloway.

The Canadian Practitioner and Review, May, 1911:

Some Types of Serum Reactions . . . William Goldie.
 Notes on some Cases at Roosevelt Hospital . . William Oldright.
 Notes on a Case of Epithelioma of the Larynx . . W. T. Wallace.

Medical Societies

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE thirteenth regular meeting of the society was held Friday evening, April 7th, 1911, Dr. D. J. Evans, in the chair.

LIVING CASES: 1. Dr. A. E. Garrow showed a living case, which had been treated by operation for hour-glass contraction of the stomach, with complete restoration to health. Dr. F. A. C. Scrimger showed the x-ray plates taken before and after the operation. Dr. W. F. Hamilton discussed the case. 2. Dr. W. F. Hamilton presented a case suffering from *filaria sanguinis hominis*. The patient had contracted fever while on a visit to the West Indies some two years before, and the urine had presented the turbid characteristic appearance ever since. Dr. F. A. C. Scrimger showed a specimen of the urine and also a slide of the blood showing the organism. Dr. C. A. Peters discussed the case. 3. Dr. G. E. Armstrong present a patient who had suffered a fracture of the skull. After operation the patient recovered completely. Dr. A. E. Garrow discussed the case.

PATHOLOGICAL SPECIMENS: Dr. O. C. Gruner presented the following pathological specimens: 1. Pancreatic cyst. 2. Uterus with carcinoma of the cervix and extension of the disease into the broad ligament on the left side. 3. A small tumour removed from the skin of an adult; had been present for a long time; microscopically, parts looked like spindle-celled sarcoma, parts like endothelioma, and parts like perithelioma. 4. Slide from the thymus of a foundling showing small cysts.

The paper of the evening "Cancer of the Uterus—a Clinical Experience of Ten Years," was read by Dr. W. W. Chipman. The follow-

ing is a synopsis: The experience included 67 cases of malignant disease of the uterus. All were carcinomata save one case—a sarcoma. Of the 66 cases of carcinoma, 53 were of the cervix uteri, and 13 of the corpus uteri. In the cervix the squamous-celled carcinoma was the more common type, 32 of the 53 cases showing this form of growth. In 5 of the 66 cases, fibromyomata of the uterus were also present—in four cases being found in conjunction with cancer of the corpus, and in one case with cancer of the cervix uteri. The age-incidence of the disease, and its early signs and symptoms were discussed. Many of the cases were seen too late for radical operation; and this was undertaken only in 32 cases, by the vaginal route in eight cases, and by the abdominal route in 24 cases. Various palliative measures for inoperable cases were considered. Dr. Wm. Gardner, Dr. A. Laphorn Smith, and Dr. F. W. England took part in the discussion.

DEMONSTRATION: Dr. Wm. Hutchinson exhibited a new anterior urethroscope. Dr. R. P. Campbell discussed this instrument.

The fourteenth regular meeting of the society was held Friday evening April 21st, 1911, Dr. J. M. Elder, vice-president, in the chair.

LIVING CASE: Dr. E. W. Archibald presented a patient who had suffered from dislocation of the external semi-lunar cartilage. Operation had been performed with excellent results. Dr. J. M. Elder discussed the case.

PATHOLOGICAL SPECIMENS: Dr. F. A. C. Seringer exhibited for Dr. Gruner the following specimens: 1. Brain from a man who had sustained a traumatic injury, showing an enormous clot in the right anterior part of the cerebrum pressing deeply into the brain substance. Two large openings had been made in the skull, but in neither instance did this clot come into view. 2. Extensive thrombosis of the veins over the cerebrum. The thrombosis started from the left lateral sinus from an otitis media. 3. Ovarian cyst with malignant papillomatous growth.

DEMONSTRATION: Dr. E. W. Archibald exhibited a new intestinal protector.

CASE REPORT: Drs. F. G. Finley and S. Baird reported a case of tuberculosis of the oesophagus and exhibited specimen from this case. The case was discussed by Drs. Elder and Rhea.

PAPER: The paper of the evening, "Glaucoma, a Clinical and Pathological Study of 150 Cases," was read by Dr. Fred. T. Tooke. The following is a synopsis: Clinical types. Symptoms. Normal secretion of the aqueous. Pathology. Primary causes: Occlusion of filtration angle, engorgement of ciliary processes, changes in lens and suspensory ligament, age, hypermetropia, mydriasis, comparative studies. Secondary causes: Iritis with synechiæ, serous irido-cyclitis, perforating

wounds and ulcers of the cornea, complicated cataract operations, intra-ocular tumours, intra-ocular hæmorrhages, buphthalmos. Treatment.

PETERBORO MEDICAL SOCIETY

THE annual meeting of the Peterboro Medical Society was held in the Public Library, April 28th, 1911, Dr. Greer, acting president, being in the chair. The minutes of the previous meeting were read and confirmed, after which the following officers were elected for the coming year: president, Dr. E. V. Frederick; 1st vice-president, Dr. C. H. Ams; 2nd vice-president, Dr. E. A. Hammond; treasurer, Dr. M. McClelland; secretary, Dr. M. D. Buchanan; executive committee, Dr. M. McClelland, Dr. G. S. Cameron, Dr. F. P. McNulty.

ST. JOHN MEDICAL SOCIETY

THE meeting of the society on March 29th was held in the General Public Hospital. The first part of the programme was a medical clinic by Dr. Stewart Skinner. Among the interesting cases shown were: a case of congenital syphilis, which had been little benefited by the usual anti-syphilitic treatment, but which showed very marked improvement after salvarsan. Another was that of a young man in whom several ribs had previously been resected for empyema. A portion of the lung had also been removed. There was considerable discharge still from a sinus, while the heart could be plainly seen and felt pulsating beneath the skin of the chest wall. A case in which the onset resembled pneumonia. Plasmodia malariae were found in the blood. A rapid recovery followed the use of quinine. In this case there had been no evidence of the disease for several years and no history of re-inoculation.

Dr. Murray MacLaren followed with a surgical clinic. Dr. MacLaren showed many interesting cases, among which were: fracture of the lower jaw treated with Lane's plate (bent); flail-like hand and short forearm, which had resulted from a separation of the epiphysis of the radius and its removal many years ago. Several cases of inguinal hernia and a case of hydrocele of the cord. Many interesting pathological specimens and radiographs were also shown.

On April 12th, Dr. T. H. Lunney read an interesting paper on "The Treatment of Diphtheria." Dr. Lunney dwelt with the early use of antitoxine and recommended larger doses in many cases. He also emphasized the necessity of making the laity realize that complications

are not the result of using antitoxine, but rather because of the lateness in its use.

Dr. Bentley followed with a paper on "The Physician's Fee." In his paper Dr. Bentley considered the increased cost of living within the past few years, the medical fees remaining about stationary. A tabulated comparison of fees in St. John and in other cities of the same size was then shown.

OTTAWA MEDICAL SOCIETY

THE last meeting of the season of the Ottawa Medical Society took place at St. Luke's Hospital, April 14th. Dr. A. T. Shillington reported a case of partial gastrectomy for cancer of the pylorus. Dr. Shillington considers in these cases that it is best to do a gastroenterostomy first, and in a few weeks, when the patient has gained some strength, to perform the gastrectomy. The operation was successful, and although six months have elapsed the patient is well and strong.

Dr. G. P. Howlett gave a report of one hundred and eighty-six cases of typhoid fever treated in the Emergency Hospital in Ottawa during the recent epidemic. Dr. Howlett was in charge of the hospital. The death rate was eight per cent. There were three cases of perforation, two of which were operated upon. Only one survived.

COUNCIL OF PHYSICIANS AND SURGEONS OF NEW BRUNSWICK

THE annual meeting of the Council of Physicians and Surgeons of New Brunswick was held in Fredericton, on April 4th. The members present were: Dr. Thos. Walker, Dr. Murray MacLaren, Dr. A. B. Atherton, Dr. J. D. Lawson, Dr. P. R. Inches, Dr. C. T. Purdy, and Dr. G. C. Van Wart. A committee was appointed to take the necessary steps for the presentation of a Bill containing the "enabling clause" relating to the Canada Medical Act. The Council were unanimous in desiring the passage of the Bill at the present session of the legislature. A resolution of condolence at the death of the late president, Dr. J. H. Gray, was drawn up.

The following officers were elected: president, Dr. J. D. Lawson, St. Stephen; treasurer, Dr. Thos. Walker, St. John; registrar, Dr. Stewart Skinner, St. John. Professional examiners: Dr. T. D. Walker, chemistry, medical jurisprudence, and hygiene; Dr. Stewart Skinner, anatomy, physiology, and histology; Dr. William Warwick, pathology and bacteriology; Dr. A. F. Emery, medicine, clinical medicine, materia medica, and therapeutics; Dr. W. W. White, surgery, clinical surgery,

eye and ear; Dr. W. A. Christie, obstetrics, diseases of women and children. Matriculation Examiners: G. U. Hay, A.M., Ph.B.; H. S. Bridges, A.M., Ph.D. The following committees were appointed: audit, Dr. McInerney and Dr. James Christie; registration, Dr. Inches and Dr. Thos. Walker; laws, Dr. Atherton, Dr. Purdy, and Dr. VanWart; prosecuting, Dr. MacLaren, Dr. Thos. Walker, and Dr. McInerney.

VANCOUVER MEDICAL ASSOCIATION

THE clinical section of the Vancouver Medical Association met in the General Hospital on Monday evening, March 27th. Dr. Sutherland exhibited a patient with aneurism of the arch of the aorta, showing the classical signs and symptoms. A Wasserman reaction was positive. Iodide and mercury treatment gave an improvement in the patient's condition. Skiagrams showing a shadow of the aneurism were presented by Dr. H. H. McIntosh. Dr. Bastin presented a case of excision of the carpal bones and lower end of the radius and ulna in a tubercular wrist. The operation was performed by Dr. W. B. McKechnie. The patient had a movable joint and fair use of fingers. Skiagrams by Dr. H. H. McIntosh were shown. Dr. Pearson gave a history, the patient being present, of a case of acute osteomyelitis of the radius. Skiagrams illustrating the case were shown. Dr. Lockett reported a case of intracranial tumours of a glio-sarcomatous nature with a typical history. Skiagrams and post-mortem specimen were presented. Dr. Ridewood discussed the case at length.

The regular meeting of the association was held April 10th. Dr. McKee reported for a committee, "That the society recommend to the city council that the health department be placed under a health commission, consisting of the mayor and two aldermen, representing the council, and three medical men elected by the city at large." Action was deferred till the October meeting, but the report was adopted. The question of a public dispensary was referred to the City Associated Charities, with the recommendation that the General Hospital board and the Vancouver Medical Society be asked to appoint representatives to confer with them in the establishment and control of one in a downtown section. Dr. C. S. McKee read an interesting paper on the recent work done in pathology and treatment of syphilis.

The medical section met in St. Paul's Hospital on April 24th. A case of sarcoma of the tonsil with a mass on the same side of the neck and enlarged axillary glands was reported by Dr. Nelles. A case report, with microscopical sections, of fibro-adenoma of the breast, which had caused galactoceles due to blocking of a duct, was made by Dr. Lockett, who also showed skiagrams of a fractured styloid process of the radius

due to forcible ulnar adduction in the cranking of an automobile. A special meeting was held the same night to discuss the financing of the lot recently purchased by the society for a library site.

THE WINNIPEG MEDICO-CHIRURGICAL SOCIETY

At the regular monthly meeting held April 7th, Dr. Chas. Hunter presented a patient suffering from chronic gastric ulcer, the history of which was typical of that condition. Dr. Hunter, in his remarks, laid stress upon the importance of pain as a diagnostic symptom, it being regular in its occurrence, lasting a certain definite time, and definitely related to the taking of food. He thought a diagnosis could be made between duodenal and gastric ulcer. He pointed out also that the pain of appendix dyspepsia is irregular in its onset and has no relation to food. Its presence in the right iliac fossa, when either this region or that of the epigastrium is palpated, and the history of a previous, acute abdominal distress in early life is of importance in the diagnosis. Disease of the gall bladder as a cause of dyspepsia was also mentioned. Dr. Hunter was of the opinion that considerable value could be placed upon the Murphy-Naunyn sign as a symptom in cholecystitis.

Dr. R. B. Mitchell then read a paper on aneurism, giving notes of twenty-two cases which had been treated in the Winnipeg General Hospital. Dr. Stephens followed with a paper on "The Importance of a Systematic Examination of the Stools in Digestive Disturbances." Schmidt and Strassburger's test diet and its administration were outlined. The presence of mucus, Dr. Stephens stated, is always pathological, except in minute, microscopic traces, and indicates an intestinal catarrh of greater or less degree with secretory or resorptive disturbance. Its occurrence, whether free or mixed intimately, would indicate the site of the lesion. Connective tissue shows faulty gastric digestion varying from a diminished hydrochloric acid secretion to a total achylia. Its recognition is especially valuable where it is not advisable or permissible to pass a stomach tube. Muscle fibres when at all numerous indicate a digestive disturbance in the small intestine. This, in conjunction with fatty stools and in the absence of jaundice, is very suggestive of pancreatic disease. The fermentation test as an early indication of faulty starch digestion is important. Bile or trypsin reactions are of value in the differential diagnosis of gall bladder, pancreatic, and intestinal disease. The presence of occult blood is of importance in its relation to cancer of the stomach, gastric and duodenal ulcers. In the discussion which followed, Drs. Elkin, Young, Popham, BurrIDGE, and Hunter took part.

Medical Societies

ASSOCIATION DES MÉDECINS DE LA LANGUE FRANÇAISE DE L'AMÉRIQUE DU NORD:

President—Dr. E. Hervieux, Montréal. Secretary—Dr. E. P. Chagnon, Montréal.

Meets every second year, next reunion in August, 1913, at Montreal.

ASSOCIATION MÉDICALE C. F. DE MANITOBA:

President—Dr. J. M. O. Lambert. Secretary—Dr. G. A. Dubuc, St-Boniface, Man.

ASSOCIATION MÉDICALE DE L'OUEST DE MONTRÉAL:

President—Dr. E. G. Asselin. Secretary—Dr. Aumont, St-Henri.

ASSOCIATION MÉDICALE DU COMTÉ DE JACQUES-CARTIER:

President—Dr. P. A. Valois. Secretary—Dr. Beaudoin, Lachine.

ASSOCIATION MÉDICALE DU COMTÉ DE PORTNEUF:

President—Dr. A. Larue. Secretary—Dr. Thos. Savary, Pont-Rouge.

ASSOCIATION MÉDICO-CHIRURGICALE DU DISTRICT DE JOLIETTE:

President—Dr. C. Bernard. Secretary—Dr. A. Roch, St-Gabriel de Brandon.

SOCIÉTÉ MÉDICALE DE CHICOUTIMI ET DU LAC ST-JEAN:

President—Dr. Poliquin. Secretary—Dr. A. Riverin, Chicoutimi.

SOCIÉTÉ MÉDICALE DE MONTMAGNY:

President—Dr. Gosselin. Secretary—Dr. Paradis, Montmagny.

SOCIÉTÉ MÉDICALE DE QUÉBEC:

President—Dr. D. Brochu. Secretary—Dr. J. Dorlon, Québec.

SOCIÉTÉ MÉDICALE DE RIMOUSKI:

President—Dr. L. F. Lepage. Secretary—Dr. J. A. Ross jr., Ste-Flavie Station.

SOCIÉTÉ MÉDICALE DES COMTÉS DE BEAUCE ET DORCHESTER:

President—Dr. Fortier. Secretary—Dr. L. M. Déchéne, Beauceville.

Regular meetings, March, June, September, and December.

SOCIÉTÉ MÉDICALE DE ST-JEAN (IBERVILLE):

President—Dr. Moreau. Secretary—Dr. Duval (St-Jean d'Iberville).

SOCIÉTÉ MÉDICALE DE ST-HYACINTHE:

President—Dr. J. C. S. Gauthier. Secretary—Dr. Viger, de St-Hyacinthe.

SOCIÉTÉ MÉDICALE DE SHEFFORD:

President—Dr. J. A. E. Brun. Secretary—Dr. A. Lessard, Granby, Co. de Shefford, P.Q.
Regular meetings twice a year.

SOCIÉTÉ MÉDICALE DE TROIS-RIVIÈRES:

President—Dr. DeBlois. Secretary—Dr. O. Darche, Trois-Rivières.

SOCIÉTÉ MÉDICALE DE VALLEYFIELD:

President—Dr. Ostigny. Secretary—

SOCIÉTÉ MÉDICALE DU COMTÉ DE CHAMPLAIN:

President—Dr. Trudel. Secretary—Dr. Bellemare, St-Narcisse.

SOCIÉTÉ MÉDICALE DU COMTÉ DE KAMOURASKA:

President—Dr. B. Vézina, St-Alexandre. Secretary—Dr. U. J.-I. Pajean, de Ste-Anne.

Regular meetings, February, June, and October.

SOCIÉTÉ MÉDICALE DU COMTÉ DE MASKINONGÉ:

President—Dr. L. A. Plante. Secretary—Dr. DuHamel.

SOCIÉTÉ MÉDICALE DU COMTÉ DE TERREBONNE:

President—Dr. Grignon. Secretary—Dr. H. Prevost, St-Jérôme.

SOCIÉTÉ MÉDICALE DU COMTÉ DE WOLFE:

President—Dr. Thibault. Secretary—Dr. A. Pelletier, St-Camille.

Regular meetings, the first Tuesday of March, June, September, and December.

SOCIÉTÉ MÉDICALE DU DISTRICT D'OTTAWA:

President—Dr. Aubry. Secretary—Dr. J. E. D'Amour, Papineauville.